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MONEY

Translated from the German of

KARL HELFFERICH

by

LOUIS INFIELD

M.A., O.B.E.

and edited with an introduction by

T. E. GREGORY

D.SC. (ECON.)

In Two Volumes

I

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INTRODUCTION TO THE ENGLISH TRANSLATION

THE author of this book, which now appears in an authorised English translation, played many parts in his lifetime. Distinguished alike as the defender of the gold standard during the later stages of the bimetallic controversy, as the historian of German currency reform, as the analyst of German economic progress in pre-war days, as practical banker, Minister of State, and as an ardent Nationalist politician, it is by his writings on money that he is most likely to be remembered.

The present book was first published in 1903, as one of the volumes in the collective *Hand- und Lehrbuch der Staatswissenschaften in selbständigen Bänden*, edited by Max von Heckel, and published by C. L. Hirschfeld of Leipzig. Six editions were published in the author's lifetime, the present translation being based upon the last edition revised by the author, dated May 1923, which it follows fully, except that the three chapters dealing with the legal aspects of money, which in the original German edition constituted the second section of Book II, have been omitted. As successive editions were called for, the author incorporated the latest information then available, and in this translation a final chapter from the editor's pen has been added, so as to bring the book as far as possible up to date. But, though the work is complete as it stands, within the limits of its subject, it does not fully embody the author's original intentions. Dr Helfferich had originally intended to supplement the present volume on *Money* by a companion study on "Banking." Circumstances prevented this plan from ever being carried out.

At the end of the nineteenth century, when the advocates of the gold standard, aided by the fortunate discovery and exploitation of the gold resources of South Africa, had finally triumphed over their bimetallic opponents, monetary theory entered upon a period of stagnation. So far as Germany was concerned, the state of calm was rudely shaken when the late Professor G. F. Knapp issued the first edition of his *Staatliche Theorie des Geldes* in 1905. This is not the place in which to criticise the content of that celebrated work. It is enough to say (now that under the influence of recent events a reaction against Knapp has set in in German academic circles themselves) that it is easy to see how Knapp, by his nominalistic treatment of money, his neglect of the operative economic factors, and his worship of the power of the State, should have been one of the main intellectual factors making for the catastrophe of inflation in later years. But for the time his influence was very great, and it is one of Helfferich's greatest merits that he was, and remained, an opponent of Knapp's views.

The relations between the two men were interesting. Helfferich had been a student of Knapp at Strasbourg, and Knapp himself acknowledges a debt to his pupil's work. The writings of Helfferich and of Kalkmann (another of his pupils, whose important work¹ on the currency events in this country during the late seventeenth and the eighteenth centuries is not as well known as it deserves to be), he says, "led me to the State theory of money" (*Haben mich zur Staatlichen Theorie geführt*). On the other hand, as the reader will gather himself from the ensuing pages, Helfferich's mind was largely occupied with refuting specific arguments put forward by Knapp, though his attitude is perhaps at times more coloured by Knapp's terminology and opinions than he was himself aware of.

It is hardly to be expected that a writer covering so vast a field and dealing with so many issues, historical and analytical, should always arrive at a judgment which will commend itself to his readers. To British economists, the present writer included, even his *qualified* justification of the inflationist policy of Germany will appear overstrained, and not in keeping with his general line of thought, though events have largely sustained his views of the evil consequences of the Peace Treaties. Nor will all economists be prepared to follow him in his view as to the causal relations between changes in the volume of purchasing power and alterations in the rates of exchange. But, taking the book as a whole, it may justly claim a high place in its chosen field. Especially valuable elements in Helfferich's presentation of the subject are his great emphasis upon the indispensable part played by money in an economic system based upon freedom of contract, private property, and division of labour, his insistence upon the services of a single metallic standard in providing a stable national and international monetary mechanism, and his ability to support wide generalisations by abundant historical knowledge.

It is one of the difficulties of translation that there are occasional technical terms in the one language for which no exact counterpart can be found in the other. Thus there is no convenient English word which will give the exact sense of the German "*geltung*," i.e. the extent to which a given piece of money is made legally "valid" or "good for payment" to a certain nominal amount: though it is possible to say that a coin is declared "current" at a certain figure, this will not always give the sense of the German. Again, the word "*Kassenkurs*" does not appear to be directly translatable. In the sense in which it implies that a coin is received at the Treasury *at a certain value*, it has been

¹ *England's Übergang zur Goldwährung im 18th Jahrhundert*, Trübner, 1895.

thought best to use the phrase "Treasury Rating" of the coin: where the German implies that the coin is *legal tender* at the Treasury, though not necessarily elsewhere, a locution has had to be employed. For the German "*Sortengeld*" the phrase "*Money of Account*" has been employed, as being the one most likely to express the author's meaning: each "sort" of money having its own system of internal subdivision (*vide* p. 41).

Square brackets have been employed to distinguish most of the notes added by the translator and the editor.

T. E. G.

LONDON, *March* 1927.

AUTHOR'S INTRODUCTION

OF all the constituent parts of the science of Political Economy none is perhaps so inseparably bound up with the totality of the general theory as is the theory of money. For in the complicated mechanism of modern economic life money is the instrument connecting the several parts and the whole.

Our modern economic system is founded on the principle of production for a market. Division of labour, the most important of the conditions of economic progress, perfected with the march of civilisation and continually growing in intricacy, has occasioned an ever-widening gap between the products of the individual's labour and his requirements. Nowadays most human beings can cover with the products of their own labour only an infinitesimal and diminishing fraction of their needs. They produce, however, a large surplus of things for which they themselves have no use, and obtain what they need largely by exchanging this surplus production for the products of the labour of others. The productive effectiveness of an individual is very much greater if he can concentrate on a single branch of endeavour than if he dissipates his efforts over a multiplicity of branches; he stands to gain more by becoming a dependent part of the whole than by attempting to be a self-contained entity.

This complicated system of services and counter-services, brought about by the ever-increasing intricacy of division of labour, has become possible only through the evolution of money. Money alone makes possible the exchange of goods and services in the degree required by our economic system, and has forced direct exchange, or barter, ever more into the background. Under existing economic circumstances money fulfils a universal function. From the *entrepreneur* down to the smallest peasant farmer, all sell their surplus products for money; the workman places his labour at the disposal of an employer for a money wage; the transfer of wealth and purchasing power takes place in money—in short, in the whole process of production and distribution, money enters as the connecting medium between the unit and the whole.

This omnipresence of money in the economic scheme of things began quite early to engage the attention of thinkers interested in social and political arrangements. The origins of the modern science of Political Economy are to be found in attempts to fathom the nature of money. The question occupied the attention of the early economists to such an extent that everything now included within the meaning of the term national wealth appeared to them embodied in money. Just as the alchemists racked their brains to produce gold from base metals, so the first economists, searching for means of increasing the wealth of nations, confined themselves entirely to the question of how as large a quantity as

possible of the precious metals intended as material for money could best be introduced into a country. Their overestimation of money had a considerable effect on practical politics in the seventeenth and also during part of the eighteenth century. The entire trade policy of the so-called Mercantile Period was based on the endeavour to arrange foreign trade so as to attract into the country the largest amount of the precious metals.

This naïve belief in money was, however, soon shaken. It was followed by the opposite extreme, a far-reaching undervaluation of money. Instead of money being considered the embodiment of all wealth, it was conceived as having but a fictitious worth, and as being merely a token of values (Locke, Hume, Montesquieu). Adam Smith, in his *Wealth of Nations*, enunciated the principle that the source of all wealth was work, and that the quantity of money available in a country did not in any way enter into the estimate of the country's wealth. The sole function of money, he said, is to facilitate the exchange of goods and services, and in order to obtain an accurate understanding of economic occurrences and arrangements, it is best to leave this facilitating agent altogether out of account, thus conceiving all relationships in which money acts as an intermediary, as though they took place directly and without its intervention.

There is no doubt that this method brought marked progress into the science of economics. It is as indispensable to the discovery and establishment of economic laws as is the knowledge of the vacuum to Physics. But the assumption that the mediation of money can alter nothing in economic processes goes too far. For just as the air, by its very existence and its changing constitution, affects the movements of bodies, so the employment of money, as well as its varying forms, have an effect upon economic movements.

The task of defining the modifications which the use of money necessitates in economic processes is one of the most difficult and subtle of the problems of Political Economy, and one through which economic theories are brought into closer agreement with practical reality.

It follows, therefore, that the science of money plays a most important part in general economic theory, and is vital for the correct appraising of individual problems of practical economics.

This work deals with all aspects of money. It begins with a historical study of the evolution of money, of the developments in the economic and legal¹ conceptions of regarding it, and of its general organisation. It then goes on to a theoretical study of the Money of our Modern economic system, its functions, its relation to the State, its organisation and the causes and effects of the changes which it is undergoing.

¹ The sections dealing with the legal conception of money have been omitted from this edition of the work.

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MONEY: I

MONEY

PART I

HISTORICAL

§ 1. THE DEVELOPMENT OF MONEY AND OF MONETARY SYSTEMS

CHAPTER I

THE ORIGIN OF MONEY

¶ 1. The Fundamental Differences between Money and Goods

WHAT is understood by "money," in the economic and legal sense, in contradistinction to all other economic goods, is a modern conception. In any attempt to trace back the history of money to its origins, we must ignore all special points of secondary importance, and keep steadily before us the most characteristic difference between money and other economic objects. This characteristic difference is, quite generally speaking, to be found in the fact that other economic objects ("goods") serve the purpose of direct consumption or of continued use by individual economic units, whereas money acts as a facilitating medium for the exchange of these goods, *i.e.* money facilitates the transfer of goods from one economic unit to another whilst it does not, so long as it retains its function of money, enter into consumption or continued use by any economic unit. Money is not taken for its own sake; the recipient does not take it for consumption or for prolonged use, but in order, sooner or later, to part with it again, either as a transfer of purchasing power or in return for other economic objects or services. It is true that from the point of view of the individual, goods, which none would call money, are at times exchanged, to be passed on again unaltered or in a worked-up form; unaltered by the dealer whose business it is to buy goods and sell them again, or altered by the industrialist, who procures raw material to produce finished articles for sale. But only from the point of view of private individuals is this a case of acquisition for further exchange. From the general economic point of view, manufacturers and dealers act as agents for transforming goods into a form suitable for consumption or use, and for bringing them ultimately within reach of the individual who needs them. Considered economically, all those objects

of exchange which, in contradistinction to money, we call "goods," are intended for consumption by individual economic units, whereas money fulfils its purpose by passing from hand to hand, finding nowhere a permanent resting-place.

This characteristic difference between money and goods does not consist in a difference of material composition. It is rather a difference between two functions which can be fulfilled by the same concrete object, and have in fact been so fulfilled. Thus slaves, cattle, shells, etc., in earlier days, and in later days precious metals in the form of bars or rings, were all used for either purpose.

Every process of development resolves itself into continually more intricate specialisation. This has also been the case with money. Money, as such, has become more and more differentiated from other goods. It has become the universal medium of trade and exchange. Economic goods and money thus appear as opposite concrete phenomena. But the separation is not complete even to-day. It is true that there are certain kinds of money, in particular paper money, which can be used only as money, and cannot serve as ordinary articles of consumption. But the basis of all the more important money systems, of all the systems which even in present-day circumstances are almost universally regarded as the most desirable, is, even in the stage of evolution we have reached, the so-called "standard" metallic money, worth as money no more than the value of its metallic content, and in consequence usable for other than money purposes. It is, in fact, so used by being melted down and industrially worked up. So far, therefore, as standard metallic money is concerned, the line of demarcation between money and economic goods is not fixed, but is completely variable. A concrete article which in coin form functions to-day as money can at any time be deprived of this function. On the other hand, one of the most important arrangements in the field of monetary institutions, the principle of free mintage, makes it possible to change an unlimited quantity of the metal serving as the basis of this particular system into coin. In any case, however, no commodity can at the same time fulfil the functions of both money and economic goods; its use for the one purpose withdraws it from the other.

One need only point out that such kinds of money as paper money, which cannot fulfil any but the monetary function, can exist only under conditions which obtain in highly developed economies with fully evolved legal systems, and it is at once seen that the separation between money and economic goods, as we know it to-day, could only result from a long process of development. In any research into the origins of money, one must, therefore, be satisfied to begin with the study of the minute

differences which at first existed between money and commodities, and go on to pursue the gradual intensification of these differences.

¶ 2. The Rationalistic Theory of the Origin of Money

Early students of the nature of money greatly simplified the problem of its origin. Money was to them an existing institution which fulfilled to perfection certain obvious purposes. In the recognition of the useful purposes served by money, they saw, without further ado, the cause of its original creation. They considered money as the *ad hoc* creation of a definite act of man. In those days there was no systematic historical study of remote events. Where no information was available to explain definite occurrences they were made the subject of deductive constructions. All purposive institutions in the economic and political life of the community were taken to be the results of definite creative acts of men and nations. Just as the origin of the State was derived from a definite "social contract" between individuals, driven thereto by the need of cessation from mutual warfare, so it was explained that money first arose when mankind, to facilitate exchange of commodities, agreed to create a general medium of exchange, and chose for this purpose the precious metals on account of the special advantages which these had for such uses.

It is indeed easy to understand why those institutions, which appear to us useful and by their very nature as the work of man, should be assumed to have been created in consequence of a recognition of their usefulness. There is a tendency to regard the practical arrangements of social life, which were not created by the individual, but grew out of social life, in the same light as the ingenious discoveries and inventions of individuals. Historical research has, however, thrown light upon these matters and brought about the rejection of the so-called rationalistic conception of the totality of social evolution. It has shown that the mind of the community works in a different way from that of the individual, that purposive action in social life, especially in the early stages, does not always result from definite acts based on clear conceptions, but grows mostly in an unconscious way under the pressure of the necessities of daily life. Our whole economic system is based upon the existence of money. It appears to be so eminently useful and necessary in our scheme of things that one cannot even conceive of its absence. But just for this very reason, it is clear that in many respects money must have preceded our institutions. In many and important respects economic organisation appears to be the product of money, and it is, therefore, inadmissible to ascribe the origin of money to its special suitability for our existing scheme of things.

¶ 3. Results of Historical Research into the Origin of Money

It is probable that in view of the scarcity of available data relating to the early stages of our economic development it will never be possible to establish an absolutely complete theory of the general process of monetary evolution. We have at our disposal a sparse supply of documents and references which here and there only throw light upon the conditions in the dark ages. We can, however, study this information side by side with information available from more recent observation of communities in a primitive stage of development. But though the material available is, taking it all in all, very limited, the results of researches are sufficient to enable us to obtain an understanding of the essential features for an historical outline of the origins of money.

The history of the development of money and that of economic life generally are so intertwined, that in order to find the first indications of the origin of money one must hark back to the earliest beginnings of economic life.

In the scheme of economic development the tendency of single individuals and groups to become more and more parts of a whole united by a complicated series of relations may be recognised. Economic and general social evolution begins with isolation and leads to combination. The first stage is represented by individual production. It is the stage in which single small groups, families and tribes, produce by their labour just what they require for the satisfaction of their own wants. Circumstances arising from the power of the patriarch or elder of the tribe secure at this stage a certain quite primitive regulation of production and distribution. The work to be done by individual families or members of tribes is allocated to them, as is also their share of the product. Within these self-sufficing groups there probably already existed a certain natural division of labour, based on the varying productive efficiency of the two sexes and of the different age groups, but there is no economic intercourse and, above all, no exchange. The fundamental conditions for an instrument or medium of exchange, for that known to us as money, are, therefore, lacking.

Economic intercourse in these isolated, though somewhat communistically organised, groups could only arise when the idea of ownership of property developed: for only that which is possessed by one can be transferred to another, whether gratuitously or in exchange for other commodities.

We cannot here enter into an investigation of the origins of property. If ownership is the complete and exclusive domination over an object, both in regard to the uses to which it is to be

put and to the future repetition of those uses at will, then there is in the conception of ownership the greatest possible advance from the stage of temporary use and employment of things for a single purpose.

Ownership can, therefore, be based either upon the *power* of the owner to secure to himself the continued and complete use of an object, *i.e.* to exclude others from the use of it, or else it may rest upon law or custom, in which case the community is the force behind the owner and guarantees the ownership.

The possibility and need of a continued and exclusive use of different commodities in a primitive society vary in degree with the commodity. Herein, in all probability, is to be found the basis of the gradations in the process of development of the principle of ownership. Historical research, as well as observation of primitive communities, show that the first developments of ownership were in connection with things which are the result not of communal but of individual labour.¹ This explains why land, which was cultivated by the labour of the whole community, was the last thing to become subject to individual ownership, whereas the principle first developed in connection with things such as clothing, ornaments, weapons, tools, war booty, male and female slaves, and, finally, cattle. Our investigations show that in the case of pastoral peoples, cattle, which can follow the owner about, were the object of individual ownership, whereas land, which was immovable, was communal property in a scarcely lesser degree than air. In the case of certain classes of these objects the conception of ownership as the absolute connection of the object with the owner developed to a special degree. This is shown by the customs of many primitive races who made it a rule to place in the grave of a dead man the most personal of his possessions, often including his wives. These customs may indeed be based on ideas that the soul of the departed was in some way connected with the articles of his personal use, but this very superstition of associating the person with the object is in itself the strongest elaboration of the conception of ownership.

With the development of property certain forms of change of ownership arise, in particular barter, the form which first brings money into consideration. Barter is indeed already a complicated form of exchange. It is in the nature of a double act which presupposes agreement between two individuals. The most primitive forms of change of ownership were certainly plunder and the bestowal of gifts. Among certain Polynesian tribes these were, even in the nineteenth century, the only forms of

¹ For example, personal skill, as acquired by learning a trade, is regarded as the chief means for the acquisition of property in the law of the Indian clans. (Simmel, *Philosophie des Geldes*, 2nd ed., 1907, p. 383.)

change of ownership. Robbery and gifts are one-sided acts arising out of the will of a single individual. Robbery consists in forcible acquisition at the expense of another without giving anything in exchange; gifts result in depriving oneself of ownership, by one's own act of will and for the benefit of another, without requiring counter-exchange. Gain and loss are found here to their full extent without any admixture.

From these forms of exchange, barter may have arisen in the following way :—

Among equals, *e.g.* guests, gifts found their complement in return gifts, and the same custom which postulated gifts to be made in return for those received established a requisite relation between gift and counter-gift, wherein lies the bridge leading to barter. Even nowadays we find amongst certain primitive races barter in the form of a reciprocal giving of presents. As soon as a present is given in order that a definite gift should be received in return, and as soon as the reciprocating gift is conditioned by the prior receipt of a specially desired article, the giving of presents assumes the form of barter.

In forcible acquisition, transition to barter comes about when the owner is able to withhold the object desired by his opponent, and so to force the latter to render him an equivalent counter-service. Here we find barter arising from the equality of powers of the possessor and the one desiring to possess.

The step from the one-sided forms of change of ownership to the form of barter is one of the most important in the development of civilisation. Adam Smith had already pointed out that a tendency to barter or exchange was something specifically human, not to be found among other living organisms; but he expressed no opinion as to "whether this propensity be one of those original principles in human nature of which no further account can be given, or whether, as seems more probable, it is the necessary consequence of the faculties of reason and speech." Recently Simmel described barter as a consequence "of that general characteristic of which man's specific nature seems to be composed." "Man is an objective animal," he says. "Nowhere else in the animal world do we find even the basic conditions of what we know as objectivity—the observation and treatment of things opposed to subjective feeling and will. As against simple giving or taking, acts satisfying to the full the purely subjective impulse, barter presupposes objective valuation, consideration, reciprocal recognition, an inhibition of the purely subjective desire. That this objectivity is not voluntary in origin but is brought about by the possession of equal power by the opposed parties, is of no special importance. The decisive, specifically human quality is that this equality of power does

not lead to the plunder of one by the other in combat, but to reflective exchange. In this we have the transition from one-sided and personal possession and the will-to-possess into an objective act, arising from, but transcending, the interaction of the participants. Barter, which is self-apparent to us, is the first, and in its simplicity truly wonderful, means for the reconciliation of justice with acts of change of ownership. The one who receives is at the same time a giver, and the characteristic of gain on one side only, found in exchanges of property under the domination of purely impulsive egoism or altruism, vanishes."

If, then, barter presupposes personal ownership, so, on the other hand, there is no doubt that with most nations the creation of individual ownership received a certain impetus in its development from a definite kind of trade by barter, viz. from trade with more advanced foreign nations. The desire to barter increases in proportion with the increase in the variety of commodities in the possession of different individuals. For the aim of barter is, of course, to obtain something else in place of that which one has. Accordingly, the desire for barter is quite weak within a group or tribe which, in a primitive stage of development, produces only articles of great similarity. The position alters when contact is established with foreign nations which live under other natural and technical conditions and produce goods of other kinds. So it may happen that barter is frequently introduced into particular groups or tribes from outside, and on this account foreign trade may claim priority over home trade. One need only consider the strong impetus to barter felt by savage or semi-savage races when enterprising traders from more civilised countries enter their midst and dangle before them all kinds of seductive objects such as beads, cotton and iron goods, etc., entirely unknown to them, and which, on natural or technical grounds, they could not themselves produce. Whilst these foreign merchants take, in exchange for the articles which so strongly excite the savages, specific commodities such as skins and furs in northern countries, ivory, rubber, gold dust, etc., in Africa, they stimulate amongst the natives the systematic production of these commodities with which to barter. Thus, intercourse with foreigners substantially advances trade by barter, and the commodities of foreign trade, both import and export, constitute everywhere the earliest category of goods subject to personal ownership. Consequently, not only does barter presuppose ownership, but it contributes also to the development of the principle.

Barter, based on the establishment of a relationship, a balancing between things of different kinds and different qualities, gave rise to new conditions. In addition to counting the articles, their exact measuring and weighing now become of importance.

Particularly important is the comparison of the values of the goods to be exchanged.

For counting no special artificial arrangements were required. For primitive measuring the dimensions given to the human body by nature were used. The arm, thumb, foot, step were all used. The natural weighing-scales are the palms of the hand. More accurate weighing first became necessary in the case of the most costly articles. Thin gold spirals were at first divided into small pieces merely by eye measurement, but recent metrological investigations show that the gold scales were the first artificially constructed scales used by man. Fruit kernels served for weights. The "carat," which was long used by civilised man the world over as the unit of weight for gold (in Germany until the second half of the nineteenth century), is of Arabic origin and based on the kernel of the carob-bean. Recently the theory has been advanced that the unit of weight still used in England in the trade with the precious metals and in coinage—the troy pound—is of similar origin, its smallest subdivision—the grain—being believed to be derived from the weight of a grain of barley.

The development of the methods for estimating "values" is the most complicated and interesting. We have here no concrete and tangible data such as exist in the case of measurement and weight, for valuation is a subjective process. Value is not embodied in the things themselves, but results from a process in the human brain. In any case, value has in this respect a double meaning (Simmel, *Philosophie des Geldes*). Human society is characterised by a widespread uniformity of views and general agreement about the purposes which things serve, and this characteristic produces certain forms or rules effectively influencing the subjective process of valuation in the individual mind. These norms, resulting from a sum of similar subjective occurrences, appear as something outside the mind of the individual, as something axiomatic in the realm of things—in brief, as something objective. Barter, which consists in the exchange of one commodity for another, has had the effect of making it appear that "value" is something inherent in the thing itself, and not subject to the will of the individual; for in the case of barter the value of an article is embodied in the other article for which it is exchanged. But although value thus transferred from the human brain to the outer world appears as an inherent property, this conception does not give a tangible basis for estimating values. Even the conception of a measure of value, embodied nowadays in money, differs essentially from the standards of weighing and measuring which serve to ascertain dimensions and weight objectively, and at the same time are a common expression of magnitudes and of weights. For money serves only

as the common denominator of values, but is incapable of being used for ascertaining absolute values.¹ But even this limited conception of the measure of value did not exist in the days when money was first being evolved.

How the complicated process of comparison of values grew and developed in the imagination of primitive man is a matter as to which, with our scanty data, we can obtain only a very rough idea. We are told, for instance, that the natives of the Bismarck Archipelago use cowrie-shells in barter, arranged serially and called "dewarra," which they exchange for fishes by giving a length of "dewarra" equal to the length of the fish. Elsewhere, again, we find equal measures of two things being taken as of equal value—as, for instance, a measure of wheat and a similar measure of cowrie-shells.² Such examples show the earliest stages in the process of comparing values; values are compared quantitatively, and any comparison of values not based on the quantitative congruence represents a much higher mental process.

As to the methods of comparing values which are an advance on the purely quantitative basis, we have the researches of Ridgeway to guide us. These point to the probability that quite early there were established, between all commodities which were privately owned and accordingly exchangeable, ratios of value, based on convention, which served as standards of value for purposes of exchange and were liable to but slow variation. This assumption is borne out by observations amongst peoples still in a semi-savage state. Thus, in ancient Greece and in Ireland a male slave was taken as equal to three cows. Even in quite recent times interesting tables of value of the most important exchangeable commodities were to be encountered amongst the numerous semi-savage peoples of Africa and the South Seas. Ridgeway and Schurtz give quite a number of examples. The latter, for instance, quotes from Mollien's book on his journeys in the interior of Africa³ the following table of values for Bondu in Western Soudan:—

1 slave = 1 double-barrelled gun and 2 bottles of powder.

„ = 5 oxen.

„ = 100 pieces of cloth.

1 string of glass beads = 1 gourd bottle of water.

„ „ „ = 1 measure of milk.

„ „ „ = 1 armful of hay.

2 strings of glass beads = 1 measure of millet.

¹ Cf. details given in Vol. II, Chap. iii, para. 5.

² Compare Simmel, p. 105; Schurtz, *Grundriss einer Entstehungsgeschichte des Geldes*, 1890, p. 80, and the works there cited.

³ Gaspard Mollien, *Découverte des sources du Sénégal et de la Gambie* (English edition by T. E. Bowditch, London, 1820).

In Darfour in Central Africa there existed, even at the end of the last century, a table of values the basis of which was a male slave of specified normal size. Such a slave ranked equal to 30 pieces of cotton cloth of a certain length, or to 6 oxen, or to 10 Spanish dollars of a particular fineness. This system was supplemented by rings of pewter, strings of beads, etc.

We cannot ascertain how these ratios of value developed or how far they originated in payments made to priests and chiefs; but that they should have arisen need cause no surprise. The more active and intricate trade becomes, the more sensitive becomes the exchange relation of different commodities; the more inactive and primitive the trade, the more sluggish is the movement of prices.¹ We need only compare the movement of prices on the Stock Exchange, that most delicate organism of modern trade, with the same movement in outlying provinces. In the latter, even now, prices and wages are frequently dictated by custom, varied only by compulsion, often unwillingly. Here custom rules, there individual evaluation obtains in each particular case.

It is probable that these ratios of value based on custom covered all commodities which could be considered alienable property. Definite fixation by general agreement of the relative values of goods makes barter substantially easier by eliminating the necessity of estimating values for each individual act of barter. It is in fact possible that on an extensive scale barter could only come into being upon the establishment by the civil or religious powers of ratios of exchange, because only thus could the difficulty caused by the absence of any tangible basis for comparing values of commodities of different kinds be overcome. Long after these primitive stages, an objective formula for exchange and prices was a necessity in trade. Fixation of relative prices and similar arrangements supplied such a formula or rule.

It has been held that the first appearances of money are to be discerned in commodities thus related by a traditional ratio of value (Ridgeway and Lotz). But this assumption loses point where the tables of value cover all exchangeable goods. So long as this is the case, money and other exchangeable goods have not yet become differentiated. The essential characteristic is still missing, whereby individual commodities are selected from all those exchangeable and are primarily applied to the purpose of facilitating the exchange of the remaining commodities—not being exchanged in fact for their own sake, but so that they may be exchanged again for other things.

Money had, therefore, first to evolve from the mass of those commodities which represented property and stood in a ratio of

¹ Cf. Ridgeway, *The Origin of Metallic Currency*, 1892.

exchange regulated by custom. We must visualise this evolution in the following way: At first certain commodities yielding a direct use would at times also serve the subsidiary purpose of a medium of exchange. Clearly, not articles of direct consumption but commodities of permanent utility would be chosen for this purpose. The savage and half-savage is distinguished by his lack of care for the future. If lucky in war, hunting, or fishing, he does himself right royally as long as supplies last; then he again suffers hunger. Game, fish, and fruit he consumes as quickly as possible. On the other hand, articles of ornament of all kinds, such as rings and bars of gold or bronze, beads and shells, weapons and precious vessels, male and female slaves, herds of cattle, etc., may be accumulated in large quantities. Anyone would, if necessary, take these articles in exchange—especially with the intention of keeping them for his own use. Driven by need, or finding some other object more attractive, he would decide to pass these articles on in exchange for others. Thus, even in our day, Indian women carry their entire possessions of money on their bodies in the form of silver ornaments. In other words, silver is used by them as an ornament only so long as there is no need to use it as money.

The more, therefore, with the development of barter production was also increased, and led to a greater intricacy in division of labour, the more the difficulties even under the simplest conditions of direct barter tended to bring about a systematic use of certain commodities as media of exchange. When the number of exchangeable goods increases, it becomes less and less likely that a case should arise of the meeting of two people each of whom has a superfluity of just those goods of which the other stands in need. The increasing difficulty of direct exchange led perforce to an attempt to reach the goal by indirect methods. The difficulty could be overcome only if those who owned certain goods in superfluity were able to exchange these for goods which they could in turn at any time exchange for things which would cover their real wants. Commodities, therefore, which at first were only occasionally used in this way for exchange, came gradually to be accumulated for systematic use as a medium of exchange.

The articles which, according to historical data, were used by various nations as money in the initial stages of commercial intercourse, articles even to-day so used by semi-savage races, form a most varied collection. The special economic conditions under which the various tribes and nations lived, the predominance of hunting or of pastoral pursuits, or again the possession of metallic wealth, the influence of contact through trade with other nations and tribes and other circumstances, influenced the use of specified commodities as money. The regulations of the temporal

and spiritual powers, which prescribed certain commodities for the payment of dues and tithes, also exercised an influence in the same direction.

Mystical and religious occurrences of all kinds are even found to have influenced in a peculiar way the evolution of primitive money systems. We find hunting races using primarily weapons as a medium of exchange; pastoral races, cattle; and tribes in contact with foreign traders various articles of trade. Commodities which are chiefly for direct consumption, such as wheat, rice, tea, cocoa beans, tobacco, dried fruits, salt, and many other similar commodities, serve, for the reasons already indicated, as a medium of exchange only in more advanced stages of economic development. These products presuppose in themselves the existence of regular economic intercourse, and their employment as money is frequently met with even when metallic money is already known, but where the amount of metallic currency is insufficient, and has to be supplemented by these products. This happened, for instance, as late as the end of the eighteenth century in some provinces of the United States of America.

In addition to the named commodities, there is a group of commodities which, in quite early stages, came to be used universally as a medium of exchange. Articles which could be used as ornaments come within this group—precious stones, bronze and metal ornaments, and even cowrie-shells probably began to fulfil the functions of money because they could be used as ornaments. Of all commodities which can be used for the production of ornaments the precious metals, gold and silver, became of the greatest importance in the evolution of money, and have, in the course of time, deprived all other commodities of this function.

Extraordinary results have arisen from the connection between mystical conceptions and money in the minds of certain semi-savage races. Rarity of sources of supply, antiquity, the bringing of the money from distant parts accompanied with definite ceremonies, some sort of connection between money and the cult of the dead and the belief in ghosts—all these have frequently brought it about that semi-savage races clothed certain commodities, in themselves useless, with a mysterious dignity. Thus the extraordinary glass and enamel money of the Pelew Islands derives its value from its antiquity and the belief in its supernatural origin. The stone money of the island of Yap, which consists of millstone-like slabs of aragonite of varying sizes, is imported under conditions of great danger from the Pelew Islands. The inhabitants of the Bismarck Archipelago were in the habit of fetching their shell money at definite times from certain parts of the north coast of New Pomerania.

Since, then, the commodities which served as media of exchange were selected from among exchangeable commodities, they were naturally subject to the dominance of the ratios of value which custom prescribed for all such commodities. The traditional ratios of value created to some extent a kind of uniform monetary system from a most varied collection of commodities, such as slaves, oxen, sheep, rings and bars of precious metals, shells, skins, salt, etc. But these primitive monetary systems must not be considered from the point of view of our modern systems. The line of demarcation between a medium of exchange and a commodity of exchange was altogether indefinite, and money was not yet a thing unto itself in contradistinction to all other economic goods. Further, the commodities serving as media of exchange in these scales of value were by no means always interchangeable, a necessary condition if the various species of money are to form a monetary system. It is rather a case of a definite serial order of separate kinds of money, as a result of which valuable goods can only be exchanged by means of correspondingly valuable media, and inversely, valuable media of exchange can only be used to exchange valuable goods, and not for the purchase of large quantities of inferior articles. Thus, in Africa it often happened that slaves could not be bought against media of exchange of an inferior type, but only exchanged for such valuable goods as ivory, weapons, or gunpowder. In Angola ivory could, in trade, be exchanged only for gunpowder and guns. In Bechuanaland cattle could not be bought in exchange for tobacco, which was the general medium of exchange, but only in exchange for iron and tools. Similarly, in certain parts of West Africa one could not obtain gold in exchange for glass goods, tobacco, etc., but only for cloth, salt, or amber. Wives, too, could only be bought in certain places against definitely specified media of exchange.¹

The relations between the different kinds of media of exchange seem, therefore, notwithstanding the customary ratios of value existing between them, not to be purely quantitative but to a large extent also qualitative. Such relations cannot exist in monetary systems, the characteristic of which is absolute freedom from specific qualitative differentiation.

There are certain commodities, the possession of which was a sign of power and gave social standing; but these cannot be regarded as money, for, although they were in some cases so regarded, because of their similarity to some forms of money, they were not, in general, media of exchange, but were, in fact, specially marked by the characteristic of not being alienable. Such, for instance, are the finely worked mats of Samoa. Each of these has its more or less mythical history, and the value

¹ Cf. Schurtz, p. 80; Simmel, p. 288.

of the mat and the social standing conferred by its possession vary in accordance with the import of its history. These mats are a valuable possession of Samoan families, but do not function as media of exchange. At each fresh election of a king they were redistributed with ceremonies which mostly led to bloody feuds. They then remained in the possession of the family until the next election. How little they can be regarded as money, in any sense of the word, is shown by a document in the archives of the Government of Samoa, which is a writing from the "high chief" Mataafa to the Governor begging him to declare the mats to be unpawnable as they were holy and had the same importance for an inhabitant of Samoa as orders of chivalry and titles had for Germans.

The so-called stone money of Yap is also, if only on account of its weight, unadapted to the performance of the functions of money. The significance of the larger pieces lies clearly less in their exchangeability than in the fact that the possession of them (just as in Samoa the possession of the finely worked mats) is a sign of social standing.

¶ 4. The Precious Metals as General Media of Exchange

As has been mentioned, amongst the commodities which even in the earliest days served as media of exchange metals are found almost everywhere,—the precious metals, gold and silver, in particular, but to some extent also copper, bronze, iron, and also tin. The demand for ornaments for which precious metals are mainly used developed quite early and universally, side by side with the demand for weapons and tools for which the baser metals suffice. This general demand resulted in the metals being recognised as specially suitable as media of exchange.

We meet with gold and silver as such media in our earliest researches into the history of Assyria, Babylonia, and Egypt. As for Greece, Plutarch gives iron as the earliest general medium of exchange, and in conservative Sparta iron money continued current until quite a late period. In Italy, of all metals copper was the one which first served the purposes of money. Tin money is found in the Malay States, where tin exists in large quantities.

Everywhere, however, with developing civilisation the precious metals gradually occupied the first place, and were more and more exclusively employed for the performance of the functions of money. Together with them, baser metals, especially copper, were to a small extent retained. All other commodities which originally served as money have now altogether ceased to perform this function.

To some this process of evolution may appear wonderful and inexplicable, or as something of a paradox, in that the precious metals, which do not satisfy pressing necessities but only serve for decoration and pander to vanity, should have been raised to a dominating position in economic intercourse through their use as money, and that all should be ready to accept these dispensable precious metals in exchange for indispensable necessary articles.

But this paradox appears only on the surface. It is just this relative dispensability, combined with the beauty, durability, scarcity, and other qualities which precious metals possess, that has secured for them their position as the most important raw material for money in civilised communities.

Their beauty and their quality of being easily fashioned make them universally desirable as raw material for ornaments and for other articles of all kinds, quite apart from any question as to their utility. Whilst there is no pressing necessity for these metals, such as there is for food and clothing, the demand for gold and silver for the production of articles of luxury is much less limited than is the demand for commodities most necessary to life. It is not to the interest of anyone to accumulate more foodstuffs than are necessary for the satisfaction of hunger over a more or less short period of time, but there is no limit to the accumulation of articles of ornament. The human stomach has limited capacity; vanity, ostentation, and the desire for decoration have, however, no limit of satiety. Whoever, therefore, possessed a superfluity of necessities would be inclined to take in exchange for them precious metals in a raw or manufactured state; because not only did the possession of these flatter his vanity and increase his social standing, but he could be certain that, whenever he thought fit, he could obtain in exchange for them things which he needed and which existed in superfluity elsewhere. The indispensability of food, etc., for an individual has a quantitative limit. When this limit is passed, food is absolutely superfluous, and may become a nuisance in view of the difficulty and risk attached to its storage. In the case, however, of precious metals, their very dispensability enhances the general and quantitatively unlimited demand for them and the uses to which they can be put.

The precious metals possess, moreover, an almost unlimited power of resistance to destructive influences. Neither water nor air affects them, and they only suffer diminution of weight by fire at very high temperatures. Gold dissolves only in a mixture of three parts of hydrochloric acid and one part of nitric acid (aqua regis). It is attacked by only chlorine, bromine, and a few other chemicals. Silver is dissolved by nitric acid and by concentrated sulphuric acid, and is attacked by hydrochloric acid. Furthermore, the precious metals show great resistance to the physical

effects of rubbing, especially when alloyed in a suitable proportion with other metals. These qualities enable them to be easily stored for any length of time without risk of change in their substance. They came thus to be universally acceptable in exchange, as acceptance did not imply any compulsion either to put them to immediate use or to exchange them further without delay, as would be the case with other commodities which are liable to spoil quickly.

Again, the composition of the precious metals is absolutely uniform. It does not vary from piece to piece, and is independent of the place of origin. This is, strictly speaking, also the case with the baser metals, such as copper, although these are found mixed with other metals in greatly varying degrees, and, unlike the precious metals, cannot be refined in any way which is not relatively too costly. The homogeneity of the precious metals means that differences of quality do not arise to complicate matters, and equal weights of the same metal have ever the same values, and can, therefore, be readily substituted one for the other.

A still further important quality of the precious metals, which is essential to their function as money, is their unlimited divisibility. Precious metals can be divided with exactness into the smallest conceivable parts, and can again be melted together into a whole at but small cost. As a result of this latter possibility, the value of different pieces of these metals always corresponds to their weight. For this reason even the minutest subdivision does not bring about any loss of value. It follows, therefore, that there is no limit to the magnitude of the values which can be represented by the precious metals in contrast with commodities, such as slaves and cattle, which are, by nature, indivisible, or with commodities which can only be divided with loss of value, as is the case with diamonds. It has so far been found possible to make small diamonds out of large ones, but not one large diamond out of a number of small ones.

The plasticity or malleability of the precious metals has one particular consequence. It renders them peculiarly adaptable to take impressions, and this makes it possible for individual pieces to be authoritatively certified in regard to their fineness and weight. The great importance of this quality will be explained in more detail later.

A further consideration is the relative scarcity of the precious metals and their consequent high intrinsic value. Their specific value is high as the available supply is limited in relation to general demand, and can only be affected by new supplies. On the other hand, the available supply is sufficiently large to make it possible for these metals to be used extensively as money.

In view of the high intrinsic value of small weights and volumes of the metals, the cost of storage or transport is relatively much less than in the case of most other commodities. This also increases their acceptability, facilitates their use in exchange, and generally renders their preservation, whether at rest or in motion, extremely easy.

Finally, we must mention that especially important property of precious metals—relative stability of value, which follows from some of the previously enumerated properties.

This stability of value stands in a double connection with the substantial resistance offered by the metals to chemical and physical processes. Firstly, their resistance excludes all those variations in value which unavoidably occur in other commodities through changes of substance. Secondly, the durability of the precious metals leads to such an accumulation of them, that the largest fresh annual production, even under the most favourable conditions, forms a very small fraction of the aggregate.

The quicker the process of destruction or of consumption of a commodity, the greater is the ratio in which new supplies stand to available total supply, and the stronger is the influence of new supplies on price fluctuations. In the case of wheat, for instance, the supplies of each harvest generally exceed the stocks available from previous harvests, and year after year the available quantity of wheat, as well as its price, fluctuates primarily with the result of the harvest. In the case of gold, however, even the maximum quantity ever produced in any one year, namely, 2.1 milliard marks in 1913, represented only some 5 per cent. of the gold supplies of the world, which were then estimated at 40 milliards, and probably only one-half of this percentage of the entire supply of gold and gold articles. Thus the durability of the precious metals makes them peculiarly proof against fluctuations caused by new supplies.

Only an unusually great or small production of the precious metals, spread over a long period of time, could have any marked effect upon their value.

The importance of the durability of the precious metals is strengthened by certain consequences which follow from the sumptuary character of gold and silver. It is a well-known fact that price fluctuations are greatest in the case of the most indispensable articles of necessity, and that they diminish in proportion as the degree of dispensability of the commodity increases. With articles of luxury a smaller drop in price will re-establish the equilibrium between supply and demand than is the case with necessities. The demand for bread cannot be subject to any substantial diminution, because one would clearly rather do without other things than starve. It follows, therefore, that

much greater increases of price are necessary in the case of bread in order to shut out that part of demand which cannot be satisfied by the available supplies than would be the case with easily dispensable articles of luxury.

On the other hand, as has already been shown, the level of consumption of the most indispensable commodities cannot suffer any substantial rise, and a glut of foodstuffs, etc., which easily go bad, can, therefore, be got rid of only by a disproportionately large drop in price, whereas this is not the case with articles of luxury, the demand for which is subject to no limitation whatever. While, therefore, the first condition and outward symbol of the stability of the value of the precious metals lies in the durability of their substance, this quality is considerably strengthened by the circumstances just explained.

Certainly, the qualities enumerated above can be met with in other commodities in an equal or even higher degree. But such a happy and complete combination of them is only to be found in the precious metals.

For example, diamonds have in a high degree the property of high intrinsic value. But they are far less indestructible and they do not at all possess the quality of plasticity. By combining within themselves the various qualities we have enumerated, the precious metals become more suited to the performance of the functions of money than any other commodities, and they have consequently gradually supplanted all other kinds of money. This did not, of course, result from any definite act of will to use only the precious metals as a medium of exchange, an act of will based on the clear recognition of their advantages by someone, somewhere, at some definite point of time. Their inherent adaptability for this purpose gradually won recognition of its own accord. Each individual acted in a manner which seemed to him most advantageous for his own personal interests, and the precious metals gradually came to be the exclusive medium of exchange.

If, therefore, we bear in mind that in addition to their positive advantages, the precious metals are subject to an influence of a negative kind, tending in the same direction, we see that the process of development must indeed have been on the lines indicated. General economic progress, based on continually increasing division of labour, must of itself have resulted in a complete exclusion of other commodities which, side by side with the precious metals, functioned originally as media of exchange. We need only remember the case of cattle money, the most important group in this latter class. It is obvious that cattle could only be used as a general medium of exchange by nomadic and pastoral races, with whom cattle-farming is a universal

occupation. As soon, however, as agriculture steps in, cattle-farming loses some of its advantages: and these become progressively more limited as the pursuits of man become more varied, more separated from each other, and in proportion as they lose their direct connection with the land.

It is just in those pursuits which in the later stages contributed most to the development of monetary systems—that is, in urban industries—that we lose the basic conditions for the use of cattle as money. An artisan who has no land and no grazing rights is not in a position to accept oxen and cows in exchange for his products.

Thus those commodities whose degree of utility and possibilities of storage depended upon conditions resulting from particular pursuits, must, necessarily, have been gradually superseded as media of exchange, and this process of exclusion will have led to the more and more universal and general adoption of the precious metals as a medium of exchange, as they can be used and stored without regard to any conditions depending upon particular pursuits, and as their natural properties so strongly aided their acceptability as a general medium of exchange.

¶ 5. The Invention of Coinage

In spite of the many natural advantages of the precious metals as media of exchange, their extended use was met by a hindrance. The high value of silver, and more so of gold, rendered it particularly important to ascertain with exactness the weight and composition of the separate pieces. When all members of a tribe were hunters, they all had the requisite expert knowledge for valuing weapons and other hunting appliances; when all were stock-breeders, each man knew how to value at sight an ox or a goat. But at no time did any but a very small section of a community possess the expert knowledge necessary for testing precious metals. The very weighing, which had to be performed with great exactness, presented difficulties even after the invention of the gold-balance. Still more difficult is the task of determining whether, and how much, base metal has been mixed with the gold or silver. The appearance of the pieces of metal is but slightly altered even when relatively large quantities of copper are added and the high specific weight of the precious metals, particularly of gold, is not sufficient protection against their being fraudulently alloyed with other metals of lesser value. In order, therefore, to ascertain definitely how much gold or silver is contained in a bar, a special testing process is required. This necessity of weighing and testing the precious metals at each individual transaction must clearly have greatly retarded their

general use as media of exchange, and the difficulties led to those precious metals intended for exchange being transformed into rings and bars of a specified fineness and weight. In Babylon,¹ where the precious metals (gold and silver and also the so-called electrum or white gold, which is a natural mixture of both) appear to have won supremacy in the realm of money, people reckoned in definite units of weight of the precious metals. The system of weights was based on a sexagesimal division (1 talent = 60 minæ or 60 shekels). With certain modifications this system spread over the whole of Western Asia, Egypt, and Greece. Gold and silver stood to each other in a definite ratio of value of $13\frac{1}{2}$ to 1. The unit of weight for gold and silver differed in that the lighter mina of gold was taken as equal to 10 minæ of silver. In Babylon this system provided the basis of development of an advanced system of money which even gave rise to extensive credit arrangements, as is evident from the innumerable cuneiform inscriptions found in the ruins of Babylonian cities. Notwithstanding this high degree of development, we find no trace of coinage in that period. Men were satisfied to reduce the bars to pieces corresponding with the lower subdivisions of the weight scale, and to give them some form convenient for trade. They made them into bricks, rings, etc., of definite weight. The smaller pieces were also made in the form of rings. We find many representations of these on Egyptian monuments.

The method by which these uniform pieces of metal were produced did not, however, provide sufficient security against fraudulent tampering with their content of pure metal. One might expect that the idea of certifying the contents and weight of the bars and rings by impressing them with a stamp would naturally arise, especially as the precious metals lend themselves to stamping, and it seems extraordinary that this idea appears only at a relatively late date.

In ancient Babylon and Egypt such stamping was quite unknown. The Jews before the Babylonian exile only weighed their money. This was also the practice of the Greeks before the time of Homer, and of the Romans probably up to the time of the Decemvirate (*pendere* = to weigh; derivatives, *expensa*, *stipendium*, etc.). The Chinese tael of to-day is merely a unit of weight of uncoined silver.

The oldest pieces of precious metals impressed with a uniform stamp appear, as far as our knowledge goes, in the seventh century B.C. in that part of Asia Minor which came into close

¹ Cf. Brandis, *Münz-, Mass- und Gewichtssystem in Vorderasien*, 1866; Hultsch, *Griechische und Römische Metrologie*, 1882; Eduard Meyer, "Orientalisches und Griechisches Münzwesen," article in *Handwörterbuch der Staatswissenschaften*.

contact with Greek and Oriental civilisation. Herodotus asserted that the Lydians were the first nation to strike gold and silver coins. Modern researches and discoveries of coins have confirmed this assertion. From Lydia, the invention of the coin appears to have spread rapidly over the whole of Western Asia and Greece, and ultimately over the whole world.

The oldest Lydian coins we know are very simple in appearance. They are little ovals of metal which have on the one side a number of parallel lines, and on the other a series of irregular incisions. Of somewhat later origin are the coins which have on the obverse definite impressions, *e.g.* the head of a lion, and on the reverse, in place of the irregular incisions, a square (*quadratum incusum*). It took a long time before the reverse also came to have a picture impressed upon it. (About the middle of the fifth century.) We find in addition to heads of animals, representations of a religious nature, such as pictures of gods, which point to a connection between temples and mints, a connection which subsisted for a long time. Inscriptions giving the name of the place of minting or of the issuer appear quite early, side by side with the impressions mentioned. But the custom of impressing on the coin the effigy of the territorial ruler is not met with until we come to Hellenic times.

It was natural that the first coins should be struck exactly on the basis of the system of weights in force. Latterly the theory has certainly been advanced that coins were frequently closely related to the media of exchange which existed before their evolution. Where unminted metal, even before the invention of the coin, was used as money based on the existing scale of weights, both points of view coincide. Where, before the introduction of coinage, cattle played an important part as money, the principal coin is frequently assumed to have been struck so as to contain a quantity of metal corresponding to the value of an ox, and as an external sign of this value the oldest coins are frequently impressed with an image of an ox, etc. The Romans not only impressed their copper coins, *boum oviumque effigie*, but the name *pecunia* (*pecus*=cattle) passed from the cattle money to the metal money of later date.

We note the following as to the materials from which the coins were struck:—

The coins of Lydia and of the Greek cities of Asia Minor were struck from electrum, in which gold and silver were not always present in the same proportion. The silver content of these coins rose, however, in the course of time, from one-quarter to two-thirds, apparently as a result of intentional debasement. This kind of debasement could be comparatively easily brought about, as obviously no reliable process existed for determining

accurately the fine content of electrum. The electrum coins were consistently described as gold coins.

Silver coins are met with only at a later stage, and in Asia Minor seemed to have served only for local trade,* as would appear, above all, from the fact that the silver coins struck in the several cities greatly differ in type, whereas the gold coins are largely uniform. In Greece proper, however, silver formed the main part of the currency.

It is noteworthy that, side by side with the principal coins, typified by the gold "stater," weighing about 14.2 grams and of a value of about 1.5 pound sterling, and by the $\frac{1}{6}$ th "stater," very small coins were also struck down to the $\frac{1}{24}$ th "stater," a gold coin which would be worth about $\frac{1}{16}$ th of a gold pound sterling. At a later period Athens even struck gold and silver coins of such small value as $\frac{1}{8}$ th "obolus," the gold coin being worth little more than 3d. and the smallest silver coin about $\frac{1}{4}$ d.

Copper was minted much later to meet the demand for small money. In Athens this did not happen before the time of Pericles. Copper coinage is not found in general use in Greece before the fourth century B.C.¹

In Rome unminted copper served as a medium of exchange in the days when cattle was the common and chief medium of exchange. Gradually it supplanted cattle as money. As has already been mentioned, copper by weight was used up to the time of the Decemvirs, although even at the time of King Servius large bars of copper appear to have been impressed with definite signs (*aes signatum*). The silver coin was not introduced in Rome until 268 B.C., and the gold coin not before the end of the Republic.

If we examine the nature of the coin more closely, we find that even in its most primitive form it is something more than a metal bar of which the weight and constitution are authoritatively certified by an impressed stamp. Even before the invention of the coin, Phœnician merchants of standing stamped bars of precious metals so as to save themselves the trouble of testing and weighing; and to-day, in the bullion trade, bars are impressed with certain signs which indicate their fineness and perhaps also their weight. Stamping to certify fineness is even to-day the general practice in the case of gold and silver articles. The stamped bars would, however, not be described as coins by anyone, not because their form and size do not correspond with those which we are accustomed to find in coins, not because they are relatively heavy pieces, and so unsuitable for easy transfer from hand to hand as money, but rather on account of the more important consideration that the stamping in the case of bars is

¹ Cf. Eduard Meyer.

altogether individual in nature. The test is carried out with the utmost exactness for each bar, and its fine content determines its specification. But the specification of the content of pure metal relates only to that particular bar, and the several bars show, even when they are of the same model, differences of content and weight which are of importance in view of the high value of the metal. In the case of coins, however, the stamping is quite general. The individual coin, unlike the individual bar, is not an entity in itself. It is rather one of a kind. Stamped pieces of precious metal can only then be described as coin when they are individual specimens of a class comprising many similar specimens, all of them being interchangeable because they are all of the same value (fungibility).¹

For this reason coins belonging to the same type must not only be exactly of the same fineness, but also of the same weight. In order to prevent fraudulent abrasion of weight, the stamping on the coin, unlike that on a bar, is made to extend over its whole surface in so far as this is technically possible. The stamping is then called the "impression."

That the several coins in a class are identical is a characteristic frequently overlooked in definitions of the concept of a "coin"; and yet this very characteristic is of great importance in the evolution of monetary systems and in the significance of money in economic life. The coin minted on a uniform basis has results which the individual stamping of bars of precious metal could never have brought about, results which go far beyond the obvious immediate advantages of a saving in weighing and testing in connection with each individual transaction. Minting, on a uniform basis, more than the guarantee of content and weight, has widened the field of employment of the precious metals as money, and created the first step for the definite separation of money from the precious metals as a distinct category.

¶ 6. The Increase in the Utility of the Precious Metals for Monetary Purposes brought about by Minting

When the contents and weight of bars of the precious metals came to be certified by a definite impression or stamp, an important obstacle was removed from the use of the precious metals as money. But such certification was not in itself sufficient to bring about their general and universal adoption. Metal bars, of which each has its content and weight separately certified, are sufficient for purposes of large-scale trade. For international payments bars have even to this day preserved their importance as money. In trade on a small scale, however, bars are unsuited as a medium

¹ Cf. Knapp, *Staatliche Theorie des Geldes*, 1905; 3rd ed., 1921.

of exchange, even with certified weight and content. In primitive civilisations there are many classes of the population who can count but cannot calculate. Reckoning with complicated figures, where even the fifth and sixth places of decimals are of importance, such as is necessitated with bars of precious metals, remains a matter of inconvenience even in advanced stages of civilisation. It is indeed easily overcome in the counting houses of traders where large values are involved, but not in the give and take of daily intercourse.

Complicated reckoning is reduced to a simple form only when several kinds of coin are produced of which the larger are multiples of the smaller and the coins within each of the different classes are uniform in the matter of content, weight, and minting. By this means it becomes possible to transfer any amount of values by the mere counting of similar coins.

Only when calculation was thus reduced was the stage reached when the precious metals, as coins, could be generally and universally used as media of exchange, a stage which is a turning-point in the development of monetary systems, and even of that of economic institutions generally. The advantages offered by the nature of the precious metals for the performance of the functions of money could now be exploited to the full even in those sections of trade which could not weigh, test, or reckon with complicated figures. In the form of coins, the precious metals were readily accepted in exchange for other goods even where, in unminted form, they were regarded with mistrust owing to doubts as to their actual content. To all their natural advantages, the coined form added facility and uniformity of transfer—indispensable conditions for the development of money, which finds its true function in continuous transfer. For this reason alone the precious metals in minted form were able everywhere to supplant all other media of exchange. While these latter were gradually forced back to their original position as consumption goods, the currency of minted money became greater and greater. In proportion as minted metal became more and more accepted in exchange for other commodities, the desire for it increased. Thus coins became the object for which all other exchangeable commodities could be obtained, and everyone, therefore, was prepared to accept them in exchange for surplus commodities in his possession.

¶ 7. Coins as the Embodiment of the Functions of Money

The more the functions of the medium of exchange became concentrated in a single class of commodities, the stronger became the contrast between money and other economic goods. So long

as all exchangeable goods were at one and the same time goods and media of exchange, the points of difference between the money functions and the utility functions of goods were only slightly discernible. But when the functions of a medium of exchange become embodied in a uniform, specified, and limited class of commodities, it is possible to differentiate explicitly between media of exchange and other commodities. Even here the universal medium of exchange is not yet solely such a medium, but still unites within itself the property of a medium of exchange and that of an article of consumption: such is the case of cattle money and the unminted precious metals. We have not yet reached the stage of a medium of exchange as such, but only the stage where the function of a medium of exchange exists, although that function is limited to a single group of commodities.

With the advent of the coin this function receives its definite form. So long as bars of metal represent also the raw material for ornaments, so long as spirals and rings of gold are used both as ornaments and as media of exchange in return for other goods, so long is the difference between economic goods and a medium of exchange not as apparent as it is when that difference has received its complete embodiment in the coin. It is clear that the coined metal is not, because it has been struck into coin, permanently and irrecoverably excluded from the circle of the other goods. Coins can, of course, be melted down at any time, and the metal can then be used as raw material for the manufacture of articles of ornament; but so long as they remain coins they represent in a concrete form the function of money which before could only be performed by economic goods as a side function. This gives us the basis for a definite differentiation between money and other goods, and for a particularised conception of money which contrasts money and other goods—two groups of things which originally appeared as different functions of the same object.

We must now trace the process of separation between money and goods initiated by the coin.

While the coin appeared to all intents and purposes as a piece of metal of which the fineness and weight were guaranteed, the necessary conditions for distinguishing money and goods were incomplete. The metal still belonged to the circle of economic goods. Before the distinction could be made the coin had to acquire a degree of independence from the metal of which it was composed.

Money in coined form proved, as has been pointed out, in its usefulness as a medium of exchange, so far superior to the crude metal that the conception of a coin as the mere embodiment of a quantity of metal became obsolete. Wherever the coin found

a footing in general trade unminted metal immediately lost its place. Only in its minted form did the metal exercise what was soon felt to be its mysterious power over all other goods.

The idea thus arose that the impression on a coin was the most important element in connection with it—the impression, which at first was not more than a certification of the metallic content of the coin (that is, of its original nature)—and that the metallic content of the coin was really of secondary importance. This idea became clearer with the recognition that even coins with a metallic content reduced by use, or those originally of inferior content, were accepted without question in trade. Men began to consider minting as a kind of witchcraft which not only converted ordinary commodities into money, but turned low values into high ones.

The conception of money as something of a special nature, as against something embodying a specified quantity of precious metal, received an impetus when coins were everywhere given their own designations. Even in places where the name of a coin was originally nothing more than a description of weight—for instance, shekel, drachma, talent, as, pound, livre, mark, etc.—the coin soon won for itself an independent position altogether divorced from any idea of weight. Frequently, however, the name of a coin had been chosen at random and had no connection with weight. This apparent formality, the introduction of names of coins, became of great importance on account of the fact that wherever the coin established itself, commercial transactions and contracts of payment soon came to be effected not in determinate, state-certified quantities of gold, silver, or copper, but in definite sums of gold, silver, and copper coin. Before the invention of the coin, when money as such was not a concrete object but simply a function fulfilled by a number of economic goods, the conception of a sum of money could not arise. What is nowadays known as a sum of money, was in those days represented only by the number or by the weight of the various economic goods which served as media of exchange. In order that money totals could be measured and expressed, no other concepts and units of measure were required than those which were necessary for the determination and description of the quantities of ordinary goods. So long as, in the main, cattle performed the function of money, a sum of money was identical with a given number of oxen, sheep, etc. So long as unminted metal was used as a medium of exchange, the sum of money was identical with a given quantity of metal. Not until the coin arrived do we find a specific method of measuring money totals, the basis of which was the coin itself; and as all commodities became more and more exclusively exchangeable against money in coin form, all values

came gradually to be expressed in sums of money. Thus, the coin, as the unit for calculating sums of money, became the unit of measure in trade generally. This is the position to-day. We still express sums of money, and in connection with these all values and prices, in units which were originally units of coin—namely, pound sterling, marks, francs, dollars, etc., just as in the days immediately following the invention of the coin the Greeks in Asia Minor expressed these sums in staters and the Persians in darics. We do not express sums of money in pound weights guaranteed by the State—that is, in pound weights of coined gold or silver.

In this connection coinage confers on money absolute independence from the substance, the precious metal, of which it is composed, and thus also from economic goods generally. Money appears as an independent class of commodities with its own quantitative specification. So long, of course, as the coin retained *de facto* its original metallic content, this decisive separation was only latent and potential. As soon, however, as the metallic content of the coins became in some way or other altered, it was inevitable that this separation should become actual and effective. The attitude adopted by the State towards money must, above all, be considered here, because the State very soon arrogated to itself the power of coining money: and changes in the metallic content had naturally, in the main, though not solely, their origin in this power.

¶ 8. The State and the Manufacture of Coins

Before coins were invented, even highly developed administrations, such as, for instance, those of Babylonia and Egypt, had no reason to occupy themselves at all seriously with the question of their monetary systems. In fact they concerned themselves only with the regulation of money payments and dues to be made to the State and of legal fines and indemnities.

These unilateral transfers of wealth must, of course, be differentiated from exchange. Their regulation depended on the development of a general medium of exchange because they had to be effected in the commodities functioning as media of exchange. It was important for the central administration, the priests, etc., to be able to obtain at any time, in exchange for such portion of those commodities for which they had no use, the goods they required. On the other hand, the regulations regarding the payment of taxes to the State or to the priests, and those governing the payment of fines, certainly enhanced the acceptability of certain commodities and helped to secure for them in the course of time the character of a medium of exchange. For the very

fact that a particular commodity can, or even must, be used for the purposes referred to, gives it a greater degree of utility than that which is inherent in it and makes it specially suitable for exchange. Thus regulations relating to the payment of dues of all kinds, sacrifices, and particularly taxes for the defence of the country, certainly exercised a considerable influence in the early development of monetary systems, and the traditional rates between the values of the most important exchangeable goods were probably strongly consolidated by the edicts and tariffs relating to payments to the temporal and spiritual powers and by those relating to fines.

Coinage imposed an entirely new task upon the State, and this task brought the State into much closer contact with money. The State had now to take part in, or even to handle exclusively, the production of coined money.

The stamping of coin may have first been undertaken, as the stamping of bars of bullion still is, by merchants of standing, trading on a large scale. It has already been mentioned that bars of bullion were stamped by Phœnician traders before coins were invented. But we have no definite knowledge as to whether the actual minting was undertaken by private individuals or whether it was done at holy places of wide renown. It is certain, however, that already in the earliest times the State undertook coinage, and that the right of striking coins was soon exclusively exercised by the State.

Since then States have mostly claimed for themselves the monopoly of coinage, and it is only natural and right that the temporal power, which in the interest of the general public regulated weights and measures and produced standards of weight and measure, should also have arrogated to itself the regulation of the currency. For it is just as necessary to the public interest to have correct and uniform coins as to have accurate weights and measures. Besides, the public authority was better adapted than even the largest merchants to exercise the primary purpose of coinage, namely, the certification of weight and fineness. Only the highest authority can secure for the coin that widespread and general acceptability which its nature demands. Finally, the concentration in the hands of the State of the monopoly of coinage was certainly also affected by the realisation, already referred to, that coins could remain in currency even though they fell below their original fineness, and that the coinage could, therefore, be exploited for fiscal purposes.

Which of these aspects appeared from time to time as the more important in the opinion of the public and in that of the administrative powers, depended always on the character assumed by the general, political, and economic circumstances of the period.

In any case, the right of minting coins was, from the earliest days, so closely connected in the public mind with the power of the State that it was always regarded as an essential attribute of sovereignty, and the history of the exercise of this power reflects the general lines of development of State authority itself.

Thus Darius had already made the coining of gold money the exclusive monopoly of the central authority of the Persian Empire, and left to the satraps and vassals only the power of coining silver for local currency. After the conquest of Italy by the Romans, the provincial States were only allowed to coin money of small denominations; large denominations were coined exclusively by Rome. Augustus, after he had come to power, claimed for himself the exclusive right of minting gold and silver coins, and left to the Senate only the minting of copper. In Germany, so long as under the Franks a strong central power existed, the king alone had the right of coinage. When later the central power split up, a complete decentralisation of the right of coinage went hand in hand with it. Spiritual and temporal lords and imperial cities received at first permission to coin small money. In the Golden Bull, however, the Electors were given the right of coining gold. After the consolidation of the larger territorial States a tendency appeared towards an improvement of the monetary system, which had been disorganised after the abolition of the imperial power, and one of the first blessings which the modern German Empire produced in the sphere of economic institutions was the establishment of a universal currency system for Germany.

These analogies are to be seen everywhere. In France in the eleventh and twelfth centuries the coinage system was similarly disorganised and split up when this fate overtook the central power, but from the beginning of the thirteenth century the victory of the Crown over the barons re-established the royal right of coinage. In England the Crown had even earlier definitely succeeded in securing for itself the right of coinage.

¶ 9. Coins and the Concept of Money

The State monopoly of coinage is one of the most important historical phenomena which have led to the special position of money as contrasted with other economic goods. The monopoly of the right of coinage contributed materially to the circumstance that the special form embodied in the coin should be given an independent significance, and to the further circumstance that the definite physical emergence of money from the circle of economic goods generally should bring about in turn the development of a definite concept of money.

The course of things was as follows:—

The Government, which had laid its hand on the coinage system, was no longer satisfied with the fact that it alone was allowed to strike coins; it claimed also the right of producing coins just as it thought fit. Further, it was not satisfied with placing at the disposal of traders a particularly convenient medium of exchange, which could to some extent circulate freely side by side with other already available media, but it insisted that only the coins put into circulation by itself should rank as money.

The basis upon which both these claims of the central authority could be effective in ultimately exercising a decisive influence upon the money system was the fact, already mentioned, that the coined metal possessed advantages over the raw metal, and that after the coin had been invented it became not only the unit of currency but also the unit of account in calculating sums of money.

As the economic structure of society went on developing, so all kinds of undertakings to pay spread over it like a network with ever-narrowing meshes. Payments due to the public authority, as well as private payments arising from acts of purchase or sale, rents of property, etc., became more and more widespread. It must be borne in mind that following upon the introduction of the coin, liabilities to pay were expressed in an increasing degree in definite units of coinage which originally were nothing more than definite quantities of precious metal in a form certified by the State. It has, however, already been shown that as the characteristics of coinage developed, the metallic content of the coin became of less importance than the actual creation of the coin. And the State, having claimed for itself the exclusive right of coining, had to adopt this view for the following reasons: the technique of coining did not allow of any exact degree of uniformity, and the actual metallic content of the circulating coins was unavoidably liable to change as the coins in time became worn from use. At the same time, if the coins were to fulfil the purpose for which they were intended, the fiction had to be kept up that all coins of the same kind had the same value and were absolutely interchangeable on the basis of the value assigned to them. Whilst this result could be only imperfectly achieved on the basis of the value of the metallic content of the coins, it could be completely achieved by laying it down that coins of the same kind could in every respect be substituted one for the other. The legislature thus assigned to coins a definite "currency" or validity which purposely took no account of differences and changes in the fineness of the individual pieces.

We find amongst the Romans a process of evolution based on a clear realisation of these conditions. When the Romans

introduced coins in place of copper bars (which had to be weighed), they prescribed in advance that these coins were to be accepted in accordance with the value assigned to them—in other words, in accordance with the “ nominal value ” as we should say to-day—irrespective of whether the metallic content actually conformed to the nominal value.

This principle may indeed be regarded as having originated in the deficient technique of coining and to have been brought about by the abrasion of the coins through wear in use. Nevertheless it means no more nor less than that it is the duty of the State to prescribe that contracts to pay which are expressed in terms of coins of the State—that is, in the money of the State—can and must be carried out in those pieces which are designated as coins, without regard to their actual metallic content. From this it appeared that the State and its legislation could make their own conditions with regard to the fineness of the coins and with regard to contracts expressed in terms of coined money, and could alter these conditions at will. This made money an independent entity at law. The quantity of the precious metal which had originally corresponded exactly to the unit of account of the money, became but an attribute of money, an attribute which could be fixed and altered at the free will of the Government. The original relation between metal and coin appears thus reversed. While at first the content of the coin was an indispensable condition, and the form of it was nothing more than a certification of that content, the coin and the unit of account for which it originally stood now appears as the indispensable condition, and the State fixes and alters at will the metallic content. The State could, however, in practice exercise its unfettered control over money to the full only by excluding from monetary functions all foreign elements which were not subject to the influence of the State. In so far as coinage was concerned, the State in virtue of its monopoly of coinage enjoyed full dominion. The production of such money rested in its hands.

The State could only exercise its power in this matter completely if the coins struck by it were the sole currency. Because it lay in the power of the State to order that the coins struck by it were to be the sole currency, the State could raise its money to the position of an independent entity, and reduce all other money substances (metals being the only ones which in practice fell to be considered) to whatever degree of subordinate importance it desired. A remark, essentially to the point, is made by Simmel in connection with the Roman legal formula, mentioned above, which prescribed that copper coins were to be accepted in accordance with their nominal value and irrespective of their metallic content. In connection with this formula, Simmel says

that it requires the addition of a provision that money should consist only of the coins in question and that other kinds of conventional money in use were merely goods, that claims for money payments could only be enforced at law if expressed in the prescribed coinage, and that all other money debts, analogous to the debts payable in terms of goods, could be sued for only in accordance with their actual value and thus not in accordance with the nominal value in money. The State's right to determine what actually was money was, in the succeeding periods, preserved and further developed in close connection with the State's right to determine the content of its money.

Only rarely, however, was the exact state of affairs analysed with any clearness, and the ancient theoretical disputes, dating back to Aristotle, whether money had its origin in law or in nature, whether its value depended on its metallic content or on the external form given to it by the State—all these questions would have been substantially simplified by a true and correct understanding of the historical development of money. This is no place for discussing the various theories; they will receive their due treatment in the theoretical portion of this book. All we need mention here is that the right of the State to impose its will in all matters relating to the metallic content of its coins was in practice always upheld. This idea first took concrete historical form in the well-known *Seisachtheia* which Solon carried through in 594 B.C. in Athens. In order to reduce all debts by a quarter, Solon did not use the method of reducing by one quarter the nominal amount of the debts, but he reduced the metallic content of Athenian coins by one quarter and prescribed that all creditors must accept payment in the now lighter coins at their nominal value. The Athenian money existed thenceforward as an entity which was at law the same as before, but it now contained different ingredients in that it had a smaller content of precious metal.

All the numerous cases of debased coinage, cases from which no State has been exempt, are practical expressions of the same conception. Everywhere we see with the process of time a substantial diminution of the fineness of the coin. The Greek "talent," the Roman "as," the "pound" or "livre" in Italy, France, and England, the "mark," and later the "gulden" and "taler" in Germany—all these units of account remained legally the same entities, although their metallic contents went on diminishing. Certainly, in the case of debased coinages, we are concerned with a procedure based on false economic doctrines and with a desire to profiteer on the part of the administration, but the mistakes and abuses committed should not mislead us and blind us to the fact that in all practical arrangements relating to monetary systems it is very greatly to the public interest that the Govern-

ment should not only have the right but also the duty of stepping in whenever necessary. This principle, which altogether contradicts the view that money and the metal of which it is composed are one, which in fact regards the metallic content as merely a substance to be determined at will by the State, makes so vital a measure as that of a modern change of currency standard both comprehensible and legally justifiable; for the transition from a silver to a gold standard is clearly based on the fact that the State may not only alter the quantity of metal in its monetary unit, but that it may also alter the nature of the metal of which its money is composed by replacing silver with gold. If we consider such phenomena without entering upon theoretical arguments, simply *de lege lata*, then we see that money has preserved its legal and economic continuity notwithstanding changes in the metallic content of the units of coinage; and in this fact we see the contrast in clearest form between the actual concept of money and the substance of which it is composed. Only when this separation of money from its substance is complete is the evolution of money at last at its ultimate goal.

CHAPTER II

DEVELOPMENT OF MONETARY SYSTEMS

¶ 1. Types of Coinage

THE separation of money from the other economic goods and the evolution of a special concept of money has its complement in the creation of *monetary systems*. The process of development of money results in positing money as an entity opposed to the multiplicity of economic goods, and the consolidation of the various concrete forms of money into one unity has been effected by the construction of monetary systems.

We know that in the early stages of the evolution of money many and various exchange commodities existed side by side in a relation of value regulated by custom, commodities some of which in course of time more and more exclusively took over the function of a medium of exchange. ¶ In these early stages, in which there was no separation in principle between money and goods, there can be no question of any actual "monetary system." As already shown, these combinations of media of exchange were not isolated from other commodities and lacked unification within themselves. Every step forward in economic thought had perforce to favour a free and impermanent evaluation of the separate commodities as against a customary valuation of them, and had thereby to loosen still further the already loose connection in which individual media of exchange stood to each other in the traditional relations of value.

As the precious metals became in the long run the only media of exchange, this gave rise to a definite tendency directed towards unification, especially as the fluctuations in the relative values of silver, gold, and copper were clearly, even over longer periods of time, quite insignificant.

But this tendency towards the evolution of a unified system of money was interrupted by the invention of coin, an invention which so greatly enhanced the possibility of using the precious metals as media of exchange. From now onwards we find a multiplicity of different coins made of the same metal, and, for the same reasons which led to the independence of coin as against the metal, the different kinds of coins won for themselves a certain degree of independence.

Trade, from the very beginning, required many different kinds of coin. It was, of course, the essence of the advantage claimed for the precious metals that they permitted the creation of many different units of value on account of their unlimited divisibility and plasticity. It is, therefore, quite natural that not only should the unit of currency itself be minted, but that multiples and sub-multiples of it should be produced. This simple subdivision of

the same type of coin was not all. Different kinds of basic types arose. The coinage monopoly of the State, which extended over its entire area, and brought in its train the necessary exclusion of foreign coins from that area, became fully developed only with the passage of time. For this reason a common circulation was frequently found even where the separate cities and States coined different types of money. Even within one and the same State different types were often struck. It sometimes happened that different kinds of coin entered at first from outside, grew in favour, and were ultimately adopted by the State as a new type of coin, without the production of the old ones ceasing, or, at all events, without their complete withdrawal from circulation.

The less the concentration of the exercise of coinage rights, and the less the impenetrability of the currency from outside, the greater is the variety in the types of coin.

From the very first we find such variety. In Lydia itself, the land of origin of the coin, gold coins of two different types appear to have been struck, based on the differences between the Babylonian system of weight for precious metals and the Phœnician system, which was derived from the Babylonian. They were the stater of some 14·2 grammes in weight (Phœnician standard), and the stater of only 10·8 grammes in weight (Babylonian [silver] standard). In both cases there were coins representing fractions of these coins. In the Greek cities of Asia Minor coins were also struck on different standards of weight, partly on the basis of the Phœnician-Lyidian standard, and partly on that of the heavy Babylonian gold standard, a stater of some 16·5 grammes. The latter type was coined in Phocæa at the time when that city was at the height of its economic importance. As already stated, the autonomous Greek cities of Asia Minor had a much greater variety of standard silver coins than of gold coins.

Coins varied in type not only because there were different amounts of metal in them, but also because the metal—electrum—was not always a mixture containing the same proportions of gold and silver. This mixture underwent a gradual process of debasement. Mommsen, in his history of Roman currency, states that the melting down of a Phœnician stater as a test showed it to have been composed of 412 thousandth parts of gold, 539 of silver, and 49 of copper.

Cræsus, king of Lydia, scarcely more than a century after the invention of coinage, already found it necessary to reform the coinage radically in view of the great variety of the coins current in his kingdom and on account of the debasement of the electrum. In order to place the currency of his State on a simpler and more reliable basis, he did away with the coining of electrum and introduced coins of pure gold and of pure silver. But even these

new coins were not uniform and were struck on two different bases.

We see, therefore, that almost immediately after the introduction of coinage different types of coin developed within the same area of circulation, each type with its divisionary coins forming a group.

This division into separate, mutually independent, types of money is even more clearly seen in the case of nations which were not prompted to use coined money by their own inventive genius, but learned to use it by contact with more highly civilised nations. Even to this day we can observe amongst such nations the use of different coins of the different trading nations. Often they even use types of coinage which do not rank as standard currency in their country of origin, but are exclusively coined for purposes of trade with foreign, half-civilised nationalities. Such coins were the Maria-Theresa taler, the Spanish and American trade dollars, etc. These coins often became incorporated in the "commodity" or traditional monetary systems, and performed their functions as a medium of exchange side by side with oxen, salt, shells, and other exchangeable commodities. The combination of different types of money from different countries leads in such cases to an extraordinarily variegated mixture, without internal order or coherency.

Only when we reach high stages of economic and political development and to a strongly centralised State power is it possible to construct a uniform system out of the different kinds of units, fractions, and multiples of different types of coin. It was possible to do this for the best period of the Roman Empire, and later, in a more complete form, for the modern States of European civilisation.

In order to understand the history of the evolution of modern monetary systems, it is necessary to study in some detail the money of the Middle Ages and that of more modern times.

The Roman monetary system became completely disorganised at the fall of the Roman Empire. In the storm and stress of the "Völkerwanderung" not much more was left of the Roman system than the mere fact that the coin as such had come to stay. The currency of the States which were arising was based mostly on the types of Roman coin; West Roman as well as East Roman coins were used, but coins of their own devising were also struck on the old patterns.

In the course of time a most astonishing variety of types arose in the several countries. This happened in the most marked degree, for reasons already mentioned, in lands where the temporal and spiritual lords and the cities gained a relatively independent

position and won the right of exclusive coinage. Such was especially the case in Germany, where towards the end of the Middle Ages some 600 mints were working. Similar conditions obtained in Italy, on account of political divisions; but France, and especially England, succeeded in introducing a centralised currency much earlier.

How little the central government in the Middle Ages, and partly also in more modern times, controlled the development of monetary systems, and how little power the government had to create a complete and unified system of currency, is characteristically shown by the fact that fresh monetary phenomena, such as the emergence of new coins and the transition from the predominant use of one precious metal to the use of the other, took place independently of the authority of the separate governments, and were in fact mostly effected by way of international relations.

This is usually the case with the larger types of coin, which, by their very nature, were not territorially circumscribed to the same extent as were the small coins.

For instance, in the tenth century the "bisant" or "bezant," a byzantine gold coin derived from the Roman gold "solidus," spread over the whole of Europe and even to England. But silver currency based on the type of the "denarius" preponderated in the circulation. The continued debasement of these small silver coins led gradually to the striking of silver coins of large denominations only, and the debasement of these larger coins led in turn to the more and more exclusive use by merchants of gold money. In these centuries, Italy led the way in matters relating to European currency. In Florence, large silver coins of the value of 12 denarii were struck, probably as early as 1182, and coins of the value of 24 and 26 denarii were struck in Venice probably from 1194 onwards. It is probable that these coins were imitations of oriental silver coins. On account of their large size, unusual in those days in Europe, they received the names of "grossi" or "grossoni." They then appeared in France as "gros tournois," in England as "groats," and in Germany, from about 1300, as "Groschen" or "Dickpfennige" (thick pennies).

But these large silver coins were everywhere seriously debased in fineness and in weight. The degree of debasement varied in the different countries and in the different territories of the same country. In Florence, the grosso fell between 1252 and 1347 to one-third its original fineness.

This debasement of silver coinage prepared the ground for the adoption of gold coins. The first gold coins of those days appeared under the name of "florenes." It has been shown

that they appeared in Florence from 1252 onwards, and were probably not coined before that year. It is generally assumed that their name is derived from that city. According to Le Blanc, however, the name "floreus" as a name of a coin can be found in documents dating back to 1148, and it is possible that the name is derived from the flowers which appeared as a device on these gold coins, especially as in Germany these coins received the name of "Liliengulden." About the same time we find the appearance of "ducats," but it is not clearly known whether they first appeared in Apulia or in Venice. Florenes and ducats appear to have been originally identical; but considerable differences in fineness and weight appearing in them, they soon formed two differing types which dominated for many centuries the currencies of European States. As with the large silver coins, the degree of debasement varied territorially. They became least debased in Italy and most in Germany, especially after the acquisition by the various Electors of the right of coinage, a right given them in 1356 in the Golden Bull. In accordance with the third Imperial ordinance relating to currency, issued in 1559, which recognised the gold gulden (floreus) and the ducat as imperial coins, 93 $\frac{4}{11}$ golden gulden and 67 $\frac{4}{11}$ ducats were to be struck from a "fine mark" of gold. This statutory fineness was not altered until 1737.

Later we find the "pistole," of Spanish origin, gaining a similarly international and widespread circulation. These "pistolettes" are regarded as having been the model of the French Louisdor, the Prussian Friedrichsdor, etc.

Just as in the thirteenth and fourteenth centuries debasement of silver currency led to the creation and widespread adoption of new gold coins, so in the fifteenth century the debasement of gold coins—together with the increase in the German production of silver—contributed to the re-establishment of silver in its old position in international trade. In Venice, the most important market for German silver, the value of the gold gulden was represented, as far back as 1472, by a silver coin of a hitherto unprecedented size. This example was imitated first by the Archdukes Maximilian and Sigismund, who began in 1479 and 1484 respectively to strike from the silver found in their Tyrolean mines similar large coins which received the name of "gulden-groschen." From 1519 onwards this coin (= $\frac{1}{8}$ th mark of fine silver) was struck in large quantities by Count Schlick in Joachimsthal in Bohemia. These coins thus came to be known as "Joachimstaler," or ultimately "taler." From this coin arose later the "silver-gulden" and "taler," which came to be of such great importance in the more modern history of German currency. The silver gulden was adopted as the imperial silver

coin in the imperial ordinances of the sixteenth century. The coining of talers was expressly prohibited by the imperial decree of 1559, but was again permitted by the decision of the Parliament of Augsburg in 1566. This taler, the "Reichsspeziestaler" ("Imperial specie-dollar") of $\frac{1}{3}$ th mark of fine metal, remained for a long time the basis of German silver money.

We thus find in those days a great variety of types of coin which did not fit together as one unity with various subdivisions, but of which each unit with its particular subdivisions formed a special type, and of which each has a history of its own, varying with States and territories. In the case of coins of small denominations, the types varied still more with the place and time of their coinage. These were in a continuous state of flux, and their connection with the large coins was very loose.

It can be seen at once that this chaos cannot be compared with our modern coinages, which are based on a single type of coin, have a single unit of account, and are constructed on the decimal or some other rational system. The question thus arises of the manner in which these various types of money circulated concurrently, and what was the relation between them.

¶ 2. Money of Account ¹

As already indicated, each of the various types of coinage had in the centuries under discussion its own peculiar history, whilst the causes of their mutual independence were essentially the same as those which had previously led to the independence of the coin from its component metals. Contracts of payment were no longer expressed simply in terms of precious metal, but in terms of coin, and with the growth of different types of coinage it became necessary to frame contracts in one or other of these types. Recurring changes in the fineness of the coins resulted in one and the same sum of money being represented by fluctuating quantities of the precious metal, and so upset the established relation between quantities of metal fixed by weight and sums of money expressed in terms of units of currency. These changes in the actual fineness of the coins affected the several types of coin in circulation in varying degree, and thus led to an inevitable separation between the different types of currency.

¹ Cf. with this paragraph the article on the "Historical Development of Monetary Systems" in the author's Study of Monetary and Banking Systems, first printed in Conrad's *Jahrbücher*, 3rd Series, vol. ix; in the same work the article on "Parallel Currencies and Moneys of Account," by Lexis; also Schmoller, "On the Development of Correct Theories of Token Money from the Seventeenth to Nineteenth Centuries," in his *Jahrbuch*, vol. xxiv, 4; further, Lexis, article on "Parallel Currencies" in the *Handwörterbuch der Staatswissenschaften*.

The causes of the recurring changes in the fineness of the types of coinage were to all intents and purposes as follows:—

Deficient technique of minting caused a lack of uniformity in the fineness of even such coins as belonged to the same type. It thus became profitable to search out the heavier coins, leaving the lighter in circulation, and this made an ever-widening gap between the actual and the normal metallic contents of the coins in circulation. The different types of coin suffered in varying degrees and were dependent upon the amount of care exercised at the mint and the extent to which the various types lent themselves to technical uniformity in coining. (Small coins are naturally liable to greater relative deviations from normal fineness.)

In addition to the unintentional debasement of the circulation, diminutions of weight and fineness were brought about of set purpose. The same type of coin—as, for example, the ducat—was debased in this way to a much greater degree in some territories than in others, and within one and the same territory the different types were debased in varying degrees. In Germany, for instance, the masters of the mint had a much freer hand in the minting of the small coins than of the large silver and gold pieces. Accordingly, debasement of small money was much greater than of large coins.

Lastly, the abrasion of coins by use had to be considered, as well as the fraudulent diminution of the contents or abrasion by clipping, filing, and similar practices, which were quite easily carried out, as the technique of coinage was still primitive and in particular the edges bore no impressions. All these factors varied with the different types. The abrasion to which coins are liable in use depends on their size and thickness. It is easier to clip thin than thick coins, and badly struck coins are more easily tampered with without risk of detection than are well-minted pieces.

The joint effect of these factors was a tendency to continual fluctuations in the relations in which the actual metallic contents of the several types of coinage stood to each other.

At the same time the governments in those days had not fully succeeded in giving to their coins a “currency” independent of their metallic contents. On the whole, the quantity of precious metal which the various types of coin actually contained was of vital importance in trade. There was also the fact that the different types were looked upon with varying degrees of favour.

The consequence was that, firstly, different types of coinage stood to each other not in a fixed but in a fluctuating relationship; and, secondly, that they were not absolute substitutes for each other for purposes of payment.

In brief, the different types did not constitute a uniform

system, but existed side by side as different types of money. There was no single system within which the differences in the types of currency were of little account; it was rather a case of separate independent types of coin, and groups of types of coin, selected at will or by custom for use in connection with any particular contract of payment. This organisation of the coinage, therefore, cannot be compared with our modern currency systems, in which money is an entity independent of the particular forms of the several types of currency. It was rather a preparatory stage from which our modern systems developed by effective co-ordination of the different types of currency. As at this stage the question of type, which in actual monetary systems loses importance, is still vital, we may call the currency of this stage "money of account" ("Sortengeld").

"Money of account" appears in its most definite form in Italy, and still more so in Germany, in view of the political conditions of these countries. In the Italy¹ of the later Middle Ages we find three groups of money of account—gold, large silver, and small silver coins—each with its own system of accounting. In Florence towards the end of the thirteenth century we find three different accounting systems, which existed side by side and each of which formed a separate monetary system:—

(1) Accounting purely in gold in terms of the gold gulden of 20 gold shillings, with 12 denarii to a shilling ("lira a oro").

(2) Accounting in gold in terms of gold gulden of 20 soldi a florini and 12 denarii ("lira a florini"). This accounting was derived from the ratios of value which actually existed in 1271 between the gold gulden and the silver soldo (grosso), and the scale of reckoning to which this system gave rise was preserved even after the exchange value of the soldi had very greatly diminished through continual debasement. For this reason, the small money of this group became as fictitious as the small money of the pure gold accounting system had always been, not being represented by actual coins.

(3) Accounting in terms of lire, soldi, and denarii of the small money in circulation—a system built up on the soldi and denarii, in which the lira was just as fictitious as was the lower divisionary money in the first two systems ("lire e soldi di piccoli"). But the soldi and denarii did not even combine into a unity. Repeated efforts by the Florentine government failed to bring soldi into a fixed relation with either the small money or with gold money. At all events the florenus was at the time of its introduction in 1252 considered a piece of 20 soldi. Subsequently, however, the soldo was debased so much more than even the gold gulden, that in 1346 as many as 60, and later even as

¹ Cf. Schmoller.

many as 85, soldi went to a gold gulden. Even greater were the fluctuations between the large and the small silver coins—the soldi on the one hand, the denarii and quattrini (=4 denarii) on the other hand. Payments had to be made in one or other of these types of currency.

Similarly, Venice possessed a gold currency and three kinds of silver currency connected with the old soldi, the soldi actually in circulation and the small money actually in circulation. Here, too, all attempts to establish by law reciprocal relations between the various types were fruitless.

In Germany the confusion was even greater. From the fourteenth century two types of gold coins—the ducat and the gold gulden—have to be considered. Side by side with these there existed, from the time of the introduction of the heavy “gulden-groschen,” or taler, three categories of silver coins, viz. dollars and silver gulden, the groschen, and, finally also, money of small denomination. Each of these types existed also in innumerable special forms depending on the time and place of minting.

How great were the fluctuations in the relative values of these types, even when their legal fineness remained uniform, is particularly and characteristically noticeable in the changes of value which the gold gulden and the ducat underwent. The standard of both these types, as fixed in the imperial ordinance of 1559, and unaltered until 1737, should have resulted in a ratio of 100 ducats = $137\frac{1}{2}\frac{1}{2}$ gold gulden. In reality, however, the ratio of exchange, as is shown in the schedules to the decrees of the imperial government currency ordinances, valuation tables, etc., fluctuated between the ratios of 100 ducats = 120 gold gulden (1623 in Saxony) and 100 = $164\frac{1}{2}$ gold gulden (end of the seventeenth century).

If such large fluctuations are found in a case in which the fineness as fixed by law remained the same, it can be easily imagined how much greater variations there must have been in the relations between the large and the small silver coins; for whilst from the Reichstag decree of 1566 to the middle of the eighteenth century the Reichsspezieltaler remained, at least in its legal fineness, unchanged—the actual coins were in fact mostly of lesser fineness than the law required—the silver coins of the medium and smaller denominations underwent most extraordinary debasements, culminating in those of the so-called “kipper and wipper” period between 1620 and 1623. At the same time the bulk of the currency in circulation consisted of small coins, of groschen, kreuzers, hellers, pfennigs, etc., which varied greatly in accordance with the time and place of their coining. As in the case of Italy, so here also a definite system of accounting was built up on this continually depreciating small money. The taler and gulden of ordinary

trade were not identical with the specie-taler and the specie-gulden, which were coins minted in the form of large silver coins—the “taler of account” corresponded to 24 groschen, and the “gulden of account” to 60 kreuzer of the small money in circulation. They were not coins actually issued, but were omnibus expressions just as are “score” and “dozen.” The taler of account became an actual coin in Prussia only in 1750, and the gulden of account did not become so in South Germany before 1837. Before that time the large silver coins were continually fluctuating in value in relation to the money of account of ordinary trade. At the end of the seventeenth century the Leipzig currency ordinance, which was adopted in 1737 as the basis of the imperial standard, rated the specie-taler at 32 groschen, equal to $1\frac{1}{3}$ “talers of account,” and at 120 kreuzer = 2 gulden, but it was not found possible to establish this ratio universally and permanently.

All attempts to incorporate the various types of coinage into a uniform and comprehensive system and to introduce fixed ratios of value between them were as unsuccessful in Germany as they were in Italy. The imperial decrees failed to substitute an orderly system for the chaos of the moneys of account.

The fluctuations in the ratio of value between the several types of coin made the question of deciding which type should be used in any contract of payment by no means of minor importance. A money debt in the modern sense of the word simply did not exist. The bill of exchange ordinances, for instance, required not only that the sum payable should be expressed in money, but also that the type of money in which they were payable should be specified; and even in a circular of Frederick the Great, addressed to all “local governments and courts of justice” on the 12th January 1762, it was laid down that “it is a general principle of law, based on its essential justice, that every debtor must repay the debt in the same type of currency in which he received it.” Only at a relatively late date do we meet at all frequently contracts of payment expressed simply in money, in terms of “current” or “circulating coin.” Legal decrees or decisions of the courts were frequently necessary in order to determine the species of coin in which such contracts had to be fulfilled. Thus, for example, in the general ordinance regarding bills of exchange issued by the Duchy of Silesia on the 31st August 1738, Article XXX, it is stated: “But if the bill is simply in terms of ‘Korrent,’ or rerated Imperial money, then the creditor must be ready to accept from the debtor in payment 17 kreuzer and 7 kreuzer coins” (such coins were actually in circulation at the time) “or Imperial talers. . . . If, however, the bill or assignat does not specify any particular type of coin, but does not at the same

time contain the word 'Korrent,' then payment can be effected also in ducats, or by weight in small coins." Even as late as the year 1755 the Town Council of Wesel inquired of the government whether liabilities originally expressed in terms of the "two-third" pieces of the Leipzig standard or in Louisblancs, and afterwards converted by the Frederician Currency Reform Act of 1750 into talers of Prussian currency, could in fact be met by payment in whole, half, or quarter talers, or even in coins representing 8, 4, and 2 groschen, all of which were then coined on the same standard.

Not only the actual fluctuations in value of the different types, but also the lack of a legal connection between them, deprived these currencies of the characteristics necessary to a unified monetary system. As it was not then found possible to establish a fixed relationship by legal decree between gold and silver coins, it has been thought that this organisation of the currency could not be designated a "double standard." It has usually been called a "parallel standard." But even this designation is not quite apposite, because the essence of a parallel standard, namely independence and non-interchangeability of gold coins on the one hand and silver coins on the other, cannot characterise a monetary organisation in which, both within the sphere of the gold coins as well as within that of the silver ones, the ratio of value of the several types fluctuates and the types cannot be substituted one for the other. Not the simultaneous existence of two "standards," but the simultaneous existence of a number of different types of coin used for purposes of account, is the essence of the conditions which have been explained, and for this reason this currency of "money of account" must be sharply differentiated from modern currency systems.

¶ 3. The Problem of the Organisation of a Monetary System

From what has so far been said it is clear that the invention of coin, important as it was to progress, was not an achievement of unmixed advantage. The coin acted retrogressively in two respects. Money greatly depreciated in value by reason of the debasement of coinage, wear and tear, or fraudulent abrasion. There developed from the same precious metal a number of independent types of coinage, and the simplicity and uniformity of monetary systems was upset.

These disadvantages, most marked during periods when the power of the central government stood low, brought about a return to the use, by large traders who could easily dispense with coined money, of unminted metal as a medium of payment. This was the

case, for instance, in the later periods of the Roman Empire,¹ and in the twelfth and thirteenth centuries in the North German Hanseatic cities. Even the large deposit banks which were established in Italy, Holland, and Germany in the sixteenth and the beginning of the seventeenth centuries were more or less definitely intended for the purpose of overcoming the two disadvantages of coined money. The Banco del Giro of Venice started its own uniform bank currency, which was unaffected by the debasement of the circulating coinage. Similarly, the Amsterdam Exchange Bank credited deposit accounts only if payment was made in defined full-weight coins. The Hamburger Girobank, which kept the aim referred to most clearly before its eyes, in 1770 made bars of fine silver the basis of its bank currency and excluded coined metal altogether. For the "Cologne Mark" of fine silver, $27\frac{3}{4}$ of the bank's units ("Mark Banco") were credited. The money of account used by Hamburg traders until 1872 was based simply on unminted silver.

Whilst large merchants in individual trading cities succeeded in this way in creating for their own purposes a money of account free from the evils of the circulating currency, the efforts of States to give to their currency the uniformity and relative stability of value of the unminted precious metals were not crowned with success until after centuries of fruitless attempts.

The difficulties which had to be overcome were due, as will be seen from the explanations in the last two paragraphs, partly to the deficient state of the art of coinage, partly to the abrasion of the coin through use, and especially to the fact that—in so far as the relation between silver and gold coins is concerned—the variability of the relative values of these two metals was a factor which grew in importance in proportion as the efforts to overcome all the other difficulties met with success.

This is not the place to enter upon detailed explanations of the development of the technique of minting, beginning with the tin money of the Middle Ages (bracteates), which was impressed on the one side only, up to our modern coins, which are produced by very complicated and extremely accurate machines and are subjected to testing processes of an extraordinary degree of accuracy before they are put into circulation. How much this contributes to the upkeep of an orderly and organised system of currency is self-evident. But the technical progress which made it possible to produce coins of almost absolute uniformity, could bring about in one respect only a small degree of change, namely, in so far as concerned the differences between the ratio of coinage-

¹ In the days of Constantine, big merchants no longer reckoned in units of coinage but in pounds weight of silver and gold. Even the Treasury accepted the official gold and silver coins only by weight.

costs and value in the case of the large and the small coins respectively. Even immediately before the Great War the cost of coining ten-shilling pieces was not substantially smaller than that of minting sovereigns. In other words, the cost of coining a specified sum of half-sovereigns was roughly double that of the cost of coining the same value of sovereigns.¹ Still greater is the difference in the cost of coining when we compare silver, and even copper, coins with gold coins.

The very great difficulty of creating and keeping up an orderly circulation of small coins is explained by the relatively high cost of producing them. These higher costs necessitated this money being struck so as to contain a quantity of metal less than the nominal value of the coins, because only by reducing the metallic content of such a coin would it be possible for the issuer to reimburse himself for the costs incurred. The idea that the issuer in the interest of an orderly and efficient currency should be prepared to bear the losses was still foreign to those times which regarded the right of minting as a useful profit-making institution. At the same time, in those days it was not understood how to surround overvalued money with precautionary regulations which would make it circulate at a nominal value substantially higher than its metallic content. The small coins were for the most part struck with a metallic content far less than that which corresponded to the higher cost of coinage, so that the issuer stood to gain most by coining this small money in large quantities. When this happened the coins soon depreciated correspondingly in value. It was not found possible to keep this coinage at a level of value higher than that of its metallic content, and with each successive depreciation the issuers found it necessary further to reduce the metallic content of the small coin in order to cover their expenses.

Where the damage wrought by these conditions was recognised and attempts were made to counteract it by fixing a limit to the reduction in metallic content, other difficulties cropped up. Thus the imperial currency ordinance of 1559 laid it down that pfennigs and heller were not to be struck with a content more than one-tenth below that of full-weight coins. This meant that such pieces could not be produced without loss. The mints which did not wish to act in violation of this ordinance accordingly ceased almost completely to coin small coins, and the consequence was that they had to tolerate the circulation amongst small traders in their territory of the very bad money of small

¹ The allowance made by the Reich to the Federal State Mints amounted, according to the latest ordinances available, to 5.50 marks per kg. of fine gold in the case of the double crowns, and to 12 marks in the case of the crowns. Cf. Koch, *Münzgesetzgebung*, 6th ed., pp. 67, 68.

denomination struck in those mints which cared little about the imperial ordinance. In England, where money of small denomination was also required to be struck with a relatively high fineness, so that its coinage could not be effected without loss, the small coins were struck in such small quantities that in the fifteenth, sixteenth, and partly also in the seventeenth centuries, there was such a dearth of these coins, that cities, and even private persons, particularly merchants, issued their own token money etc. made of brass.

The difficulty of this problem was diminished as the principle gradually gained acceptance that the State must, if necessary, be prepared to bear financial sacrifices in order to secure an orderly currency. But the difficulties were completely solved only when the principles underlying the modern theory of token money gradually developed, and when it became recognised that small money may be coined, without endangering its value or the whole monetary system, with a metallic content considerably less than its nominal value as long as it is not coined in quantities exceeding the requirements of trade, as long as a low limit is placed on the maximum amounts for which small money is legal tender and the use of it is thus confined to small-scale transactions, and as long as the State guarantees that it will change at any time any quantities of such money by giving standard currency for it. The beginnings of compliance with these conditions appear in practice quite early. Thus in England, in the first half of the seventeenth century, almost immediately after the introduction of copper money by the State, a low limit was placed on the amounts for which this money was legal tender. In Brandenburg-Prussia we also find in the seventeenth century isolated decrees limiting more or less the amounts for which pfennigs and groschen were legal tender. We also find that at certain periods quite sensible principles were adopted in so far as the amounts of such coins to be struck were concerned. There was, however, no sign of a systematic elaboration of, and adhesion to, the principles taught by practical experience, and in Germany particularly the political conditions did not allow of a correct and consequential policy being adopted in regard to token money. No State or territory can impose upon itself effective limitations in the matter of striking small coins of less than their nominal value, if it can at any time be flooded by bad money coined in a neighbouring State. A circulation exclusively of its own currency is, however, only possible if the territory of the State is of a certain size and is an entity in itself.

Of no less importance than the question of embodying the small coins in the currency systems was the problem of the upkeep at their full value of the coins already in circulation.

The technique of minting played an important rôle here also, inasmuch as every progress therein rendered the fraudulent clipping and filing of coins more difficult. In the first centuries of the Middle Ages, when this technique was quite rudimentary and on that account the danger of a repeated debasement of the coins in circulation was particularly great, a radical safeguard against the danger was found in withdrawing coins periodically and recoinng them. The entire currency in circulation was recalled, and it was required that it should be delivered to the issuer for recoinage under conditions which permitted him not only to cover his expenses but also to make a substantial profit. So long as the practice existed in Germany (up to the twelfth century) of recalling coins yearly, the denarius actually maintained its silver content. When, however, these recalls fell into disuse on account of the heavy strain which they placed upon the currency system, the period of continuous debasement of the currency set in.

Even in the first decades of the nineteenth century, I. G. Hoffman drew from the fact that coins cannot be prevented from wearing away the conclusion that every currency standard must become debased in the process of time. As the value of the coinage must on the whole be governed by the actual metallic content of the coins, and as this average content must continually diminish on account of the abrasion by wear of the coins in circulation, the State must find it impossible to keep even the standard coins at their full value, and the price of the precious metal must rise in correspondence with the loss, by wear and tear, of the money in circulation, to such an extent that the coinage of standard money is only possible at a loss. Further, such a sacrifice would be useless, as the fact that the coins were of a fineness which exceeded the average would make it profitable for dealers in the precious metals to melt them down. In view of this, there would be nothing left for the State but to cure the evil which had arisen through abrasion in use by adopting a lighter standard for its coinage.

Since those days, however, it has been found possible to find means for curing even this evil by a method which has the effectiveness of the withdrawals of the coins which were customary in earlier days but is not as inconvenient. This consists in the establishment of a definite tolerated deficiency—that is, a limit of abrasion for the coins in circulation,—and as soon as the coins pass this limit they lose their character as legal tender in private circulation or even as against the public treasury. The purpose of withdrawing from circulation worn coins is best effected, and the incidence of the loss by wear is most justly distributed, when the State undertakes to call in the worn coins

at their nominal value, and to recoin them into pieces of full value.

Accurate processes of minting, made possible by improved technique, and the introduction of a tolerated deficiency or mint allowance only slightly below the normal weight of the coins, have removed the causes which previously led to a progressive diminution in the metallic contents. It was found possible to maintain the coins at their original metallic content, and to keep them at their full legal metallic value. In brief, the coin again became, as far as concerned its intrinsic contents, a piece of metal of specified weight and fineness, as it was when originally invented.

With the removal of the causes of the debasement, the causes leading to the fluctuations in the relative values of coins struck from the same metal were also removed. As the value of every type of coin was based upon a definite quantity of precious metal, fixed relations of value between all types of coin struck from the same metal were established. Gold coins and silver coins were now joined into a uniform whole. The central government, having succeeded by the exercise of careful control in stopping the debasement of its circulation, found itself able to establish a more rational currency system, to bring about interchangeability between the separate types of coin made from the same metal, and to secure its currency against the incursion of foreign coins which did not fit well into the system of the country. On the other hand, the progress in the theory of coinage could not obviate the fluctuations between gold and silver coins caused by changes in the relative values of the two metals. But the requirements of trade indicated the desirability of embodying both gold and silver coins in one uniform system. This could, of course, be effected only in one of two ways,—either by fixing the relation between the value of gold and that of silver, so that the result achieved would be that a pound weight of gold would always be worth exactly the same number of pounds weight of silver, or by making the value of the coins of at least one of the metals independent of the amount of metal they contained (heretofore considered as the dominating factor in determining the value of a coin) and so render it possible to bring them into a fixed relation with the value of the coins of the other metal (thus, for instance, making gold the basis of value of all coins, including the silver ones). By these two methods—the abolition of the relative fluctuations between gold and silver, or the abolition of the dependence of the value of the coins struck from one of the metals upon their legal and actual metallic content—the desired result could be attained. It may be stated here that up to the present day it has not been possible to obviate fluctua-

tions in the relative values of gold and silver. The problem of freeing the coins made of one metal from dependence on the value of their metallic content and of co-ordinating them with the coins of the other metal was not completely solved until the modern gold standard was reached.

¶ 4. Fluctuations in the Relative Values of Gold and Silver

The oldest data in regard to the relative values of gold and silver come from Babylon. There a unit weight of gold was worth as much as $13\frac{1}{2}$ units in weight of silver. It is probable that this relation subsisted without noteworthy fluctuations through several centuries.

In Greece gold was generally valued less highly. We have documentary evidence that in 400 B.C. the ratio between gold and silver was as 1 : 12. Until the time of Alexander the Great the ratio appears to have fluctuated between the Babylonian 1 : $13\frac{1}{2}$ and 1 : $11\frac{1}{2}$. After the conquest of the Persian Empire the value of gold sank in relation to silver to 10 : 1.

In Rome, in the days of the Republic, the legal relation on the basis of which gold and silver coins were minted was 1 : 11·91. The actual relative value of the metals in the open market showed, however, at times considerable deviations from this ratio. Thus, the discovery about a century B.C. of rich gold mines in Aquileia is stated to have reduced the value of gold as against silver by one-third, and at the time of Cæsar the ratio in which the two metals stood to each other is said to have fallen for a time to 1 : 8·0. The coinage regulations for the first centuries of the Empire show fluctuations in the ratio between 1 : 11·3 and 1 : 12·2. The period of the decline of the Roman Empire brought a substantial rise in the value of gold which was in the main probably due to the fact that in an unstable and disturbed period gold is preferred to silver, as value for value it is easier to transport and to conceal. There is a difference of opinion as to what were the actual ratios in those days, as there is some doubt regarding the correct interpretation of certain imperial edicts dating from 397 and 422 A.D., which point to a ratio of 1 : 14·4, and even to one of 1 : 18.

During the Middle Ages the ratio remained on the whole between 1 : 10 and 1 : 12, although in isolated cases considerable departures in both directions from these limits are proved to have taken place—roughly between 1 : 8 and 1 : 13·6. The first German imperial decree relating to coinage, and dated 1524, is based on the ratio of 1 : 11·38.

From the beginning of the sixteenth century onwards a slow rise in the value of gold is observed. Soetbeer calculates the

approximate ratio between gold and silver in the period 1501 to 1520 to have been 1 : 10·75, and in the period 1601 to 1620 about 1 : 12·25. In the following five to six decades this development received a sudden and strong acceleration. The relative values are estimated by Soetbeer to have been as 1 : 15 for the years 1660 to 1680. For the beginning of the eighteenth century we have a ratio of 1 : 15½.

In the course of the eighteenth century a relative decline in the value of gold took place, which sank to a ratio of 1 : 14·56 between 1751 to 1760. An increase, however, set in again towards the end of the century to a ratio of 1 : 15½.

In the first seven decades of the nineteenth century the ratio moved within comparatively narrow limits round about 1 : 15½. The most unfavourable position of silver was (according to the London prices of silver) shown by the ratio 1 : 16·12 in the year 1848; the most favourable, 1 : 15·03, in 1859.

From the beginning of the seventies a strong depreciation in the value of silver set in, which in the course of three decades reduced the value of silver by more than one-half. At the end of the nineteenth century 34 to 35 lbs. weight of silver were worth as much as 1 lb. weight of gold, and in the year 1909 the relation was roughly 40 lbs. weight of silver to 1 lb. weight of gold.

This is not yet the place for an investigation into the causes of these fluctuations. We shall find later that these causes lay at certain times in the circumstances attending the production of the precious metals, at others in fluctuations in the relative demand for gold and silver, as with changing times and economic development now the field of employment of the one metal and now that of the other was the greater. Finally, these fluctuations can be traced to changing economic needs, which led to changes in the monetary system.

For the time being we are concerned only with establishing the fact that there never existed any prolonged period during which there was any fixity in the relative values of the two metals—with a possible exception of the prehistoric Babylonian period, as to which we have no definite data. It follows from this that it must have been an extraordinarily difficult task to create from these two precious metals a self-contained monetary system, a system providing that there should be, notwithstanding fluctuations in the values of gold and silver, a fixed and immovable ratio of value between gold and silver coins; a system, for instance, in which ten silver shilling pieces would be constantly of the same value as one gold half-sovereign. That this problem has been successfully solved, even at a time which shows the strongest deviations in the ratio of value between the two metals, has been shown by the actual condition of the monetary systems as

they existed in the most important civilised countries until the outbreak of the War. The manner in which the problem has been solved will be explained in the remarks which follow.

¶ 5. The Double Standard and the Parallel Standard

Looking backwards it is comparatively easy to obtain a bird's-eye view of centuries and thus to be able to assert that only in such and such a specific manner could this or that task have been successfully tackled. But to obtain at any given point of time a clear idea of the right methods of approach to the desired goal is not so easy. It has frequently happened that humanity has wandered in false paths for many centuries, and taken the wrong direction in attempting the solution of a problem, without becoming aware of the impossibility of reaching the goal on the paths taken. It has often happened that revolutionary changes and progress resulted not from a clear conception of new and better conditions, but from muddled and halting attempts to overcome oppressive evils in one way or another.

Such was also the case with the problem which is occupying our attention.

From the very beginning States tried to establish a fixed ratio of value, not only between the various silver coins and gold coins as such, but also between the two categories of coins, and these attempts were not based on any clear conception of the difficulties which must arise from the fluctuations in the relative values of the two metals. The governments tried to make their task as easy as possible by simply decreeing that a specified sum of silver coins was to be worth as much as another specified sum of gold coins.

It is questionable whether, and to what extent, this "rating" of gold and silver coins had any influence on the movements in the values of gold and silver. It is certain, however, that these movements in values were not thereby controlled, and that fluctuations took place round about the scheduled ratios. Further, the commercial world generally conformed to the scheduled ratios only so long as they actually corresponded to the existing relation between the values of the crude metals. Trade, in fact, attached to the gold and silver coins a value which, notwithstanding the most stringent regulations and prohibitions, fluctuated in conformity with the fluctuations in the values of the metals. In the long run the State was always driven back to the necessity of adjusting its schedule to the circumstances of trade or else to alter the fineness of one or other of the types of coin.

Changes in the ratios of value between the crude metals did not, however, always influence to the full the relation between the values of gold and silver coins. The power of the State's

ordinances was under certain conditions sufficient to retard the effect of fluctuations in the ratios of value of the metals on the ratio of value of the coins. Where, however, this was the case another evil made its appearance.

If it happened that the nominal value of gold coins expressed in silver coins was lower than that which corresponded to the then existing market ratio between gold and silver, the State, it was clear, paid for the gold brought to its mint for coinage a smaller price than that ruling in the open market. Consequently, no one brought gold to the State for minting, and all who were in possession of gold bullion preferred to sell it in the open market at the higher price obtainable there. Thus, in France from the beginning of the nineteenth century onwards the mint gave only 3100 francs, minus a small deduction for seigniorage, for a kilogramme of standard gold (900 thousandth parts of pure gold to 100 thousandth parts of copper). Accordingly, as on the Paris bullion market 3150 francs, or fifty francs more, were obtainable, no one dreamed of selling his gold to the mint. The metal, therefore, which in the official schedules stands at a figure which is unfavourable as compared with the figure obtainable in the open market, does not find its way to the mint, as its price as an economic commodity is higher than its mint price. If in such a case the State does not wish to buy the metal at a price higher than the scheduled price, and thereby to incur losses in minting, it follows that coins will be struck for the most part from the metal which, in view of the actual ratio, is overvalued.

The additional factor comes into play here that in such a case it is profitable for traders to melt down any of the coins of the undervalued metal which are not too worn, exporting the metal so obtained in exchange for the metal which is overvalued. If 3100 francs of French gold coins—neglecting abrasion—contain a kilogramme of standard gold, then as the cost of melting is negligible in relation to the value of the gold, a profit can be made by melting down the gold coins and selling the resulting metal at 3150 francs per kilogramme, either to foreign countries or in the bullion market.

From this it follows that every deviation of the official ratio from the actual ratio between the precious metals not only deprives the mint of its supply of the metal which is rising in price, but also leads to a melting down of the coins of that metal for export. Every shifting of the ratio of value between gold and silver has the direct effect of withdrawing from circulation the coins of the metal which in relation to the other is rising in price, and of thus confining the currency more and more to the metal which is depreciating.

These are not purely theoretical considerations; they are the

result of experience gained from the operation over many centuries and in many countries of the system which we know as the "double standard," or "bimetallism." Wherever the State fixed the ratio and the absolute reciprocity of function between coins of gold and silver, and minted these metals in the quantities in which they were brought to its mint, every fluctuation in the ratio of value of the unminted metals led to the depreciating metal expelling from circulation the metal which was appreciating.

The evils to which these conditions gave rise were first felt in areas economically most advanced, as their high economic development made them more sensitive to disturbances in their monetary systems. In modern times the rate of economic progress has been quickest in England, and this country therefore has been the leader in the development of modern monetary institutions.

The history of English coinage is thus of great importance if we are to understand correctly the history of the general evolution of modern currency.

As in all other countries, so attempts were at first made in England to establish by government schedules and regulations a fixed relation between the values of silver and gold coins. In the first half of the seventeenth century there were frequent fluctuations in the relative values of gold and silver, and notwithstanding corrections made in the fineness of the coins to meet these fluctuations, the relative amounts of gold and silver currency in circulation were continually changing.

This caused inconveniences which in turn led to attempts, on an entirely different principle, to keep gold and silver coins permanently in circulation side by side. The disappearance from circulation first of gold coins, then of silver coins, led to the belief that it was a particularly pressing necessity to secure a simultaneous and permanent circulation of both types of coinage; and to secure this result it was thought advisable to sacrifice the principle of a fixed relation between gold and silver which had been the cause of the changes in the amounts of the circulating currencies. Men despaired of the possibility of bringing any fixity in the relations between gold and silver coins, and of thus securing for trade a sufficient circulation of both types of currency. When a new gold coin, the guinea, was introduced in 1663 a departure from the hitherto customary practice took place and no attempt was made to give this coin a fixed value as against silver coins. The fixing of the value of the coin was left to the open market, and the Treasury was allowed to accept the guinea in payment at the rate of exchange of the day.

This system, with which England began to experiment in 1663, is called to-day the "parallel standard" or "alternative standard," as within it a system of gold coins and a system of

silver coins exist side by side without any connection, statutory schedules, or any definite reciprocity of function.

But even this system was not found satisfactory. Traders found it very inconvenient to have to calculate continually in two different kinds of money which stood to each other in a fluctuating ratio. Under the pressure of this inconvenience, the experiment with a parallel standard, which was nothing more than a renunciation of a uniform and complete monetary system, had to be dropped.

The next opportunity for the government to step in again arose when towards the end of the seventeenth century the English silver coinage lost a large part, it is even asserted as much as 50 per cent., of its original metallic content, the loss being occasioned by fraudulent abrasion. As a result, the new and relatively full-weight guinea, which was at first intended to be worth about 20s., rose in value to 30s. and more. For the government, which intended to reform the debased silver currency, this high quotation for the guinea was thoroughly inconvenient, and in order to put a stop to any further rise, the government prohibited the Treasury in August 1695 from accepting the guinea at a rate of exchange higher than 30s. When the silver coinage was reformed the maximum rate for the guinea was in the first months of the following year reduced step by step to 22s. While these maximum Treasury rates of the guinea were too favourable as compared with the market ratio between gold and silver—the rate of 22s. corresponded to a ratio of 1 : 15.9, whereas the actual ratio was 1 : 15—they had nevertheless the same effect in trade as a fixed rating. So long as the Treasury accepted the guinea at the maximum rate, no one would be willing to part with the coin in the open market at a cheaper price, and so long as this was the case there was no reason for the Treasury to reduce the rate. This amounted in effect to an abandonment of the parallel standard, and the actual position of the English monetary system was again that of a double standard—a double standard, in fact, in which gold stood at too high a value as compared with its market quotation. Even when the rating of the guinea was reduced in 1699 to 21½s., and again when in 1717 the guinea received the legal tender value of 21s., the position was in no way altered: ¹ for

¹ Opinions vary whether the guinea was made legal tender at a *fixed rate* of 21s. or at a *maximum rate* of 21s. Kalkmann holds to the former view, Lexis to the latter. Strictly speaking, the English system of 1717 could be regarded as a double standard only if the guinea had been given a fixed rate of exchange. As, however, the rate of 21s. had in practice the effect of an absolutely fixed rate, this formal aspect of the question is one of no importance whatever, especially having regard to the law passed in the following year (1718), which prohibited for the future any further changes in the nominal value of gold and silver coins.

the fixing of the rate at 21s. corresponded to a ratio of 1 : 15·2, whereas Newton himself, on whose advice the rate had thus been reduced, estimated the actual ratio to be 1 : 14·97. He thought that this reduction should be undertaken as an experiment and that it should, if necessary, be followed by a further reduction. Such a further reduction did not, however, take place because of the dissatisfaction which would have been aroused by any change in the value of the gold coin, which even in those days ranked as the most important medium of payment in England. On the contrary, resolutions¹ adopted in 1718 provided that in future no alteration could be made in either the gold or the silver coinage in the matter of their metallic content or in their normal value. This step was taken notwithstanding that the unpleasant consequence of a fixed rating—a shortage of silver money—had already made itself strongly felt. Such was the pressing need for a fixed relation between gold and silver money.

The 1717 proclamation, which replaced the maximum Treasury rate by giving to the guinea the force of legal tender at 21s. in silver money, and the resolutions of 1718, precluding any future changes in this scheduled rate, amounted to a complete reversion from the parallel standard and a return to a system based on the double standard.

In this double standard gold was, as already stated, given a rating higher than that obtaining in the open market. As this latter ratio in the succeeding decades shifted still further to the disadvantage of gold, the ratio for silver in the open market became up to the end of the eighteenth century considerably more favourable than the statutory ratio on which the reciprocal relation between the English gold and silver coins was based. In consequence—as had previously happened in similar cases—silver did not find its way to the English mint, and it became profitable to melt down for sale as metal the silver coins which had been recoined between 1695 and 1698 and had been brought up to their full statutory weight. Silver coins of full standard value disappeared entirely from circulation, and those remaining were so worn that their melting down was not a profitable proposition, notwithstanding the high price of silver. The bulk of the currency consisted of the golden guineas. These were used for payment of all large amounts, and the complaints that the worn silver currency did not even suffice for the requirements of minor transactions grew in volume. Further, the bad condition of the silver coins in circulation also gave rise to serious complaints. But these evils could not be cured without altering the entire basis of the existing monetary system, for every new issue of

¹ The original German edition erroneously supposes legislation to have been enacted to this end.

silver coins of full standard value served but as raw material for the melting-pot of dealers in the precious metals. In vain was search made for a way out of this position, in vain were means sought which would preserve the advantages of the preponderating gold currency, which men had learned to appreciate, and at the same time to add to these advantages those which would result from the upkeep of a sufficient and well-organised silver circulation.

¶ 6. The Genesis of the Gold Standard

The right road out of this untenable position was finally found by sheer force of circumstances.

The silver in circulation, unable to be recoined, became more and more worn, and the coins in the end completely lost by obliteration the devices which had been impressed upon them. The effective silver content of these coins sank considerably below the level which would have corresponded to their value in gold at the then existing market price of silver. Whilst they had been, and continued to be, undervalued in so far as their *legal* fineness was concerned, their actual fineness was smaller than that which would have corresponded to their legal ratio in gold currency. Abrasion had converted them from undervalued coins to coins of actually inferior value. In order, therefore, that no one should be forced to accept payment in unlimited amounts of money the face value of which was greater than its metallic content, it was provided by an Act of 1774 that for sums exceeding £25 silver would be legal tender only by weight, the coins being calculated on the basis of 5s. 2d. per ounce.

The statutory double standard was thus fundamentally modified. The privilege of full legal tender which had been enjoyed by silver currency was now restricted, and the right of ranking equally with the gold currency was withdrawn from it. As, however, silver coins, on account of their scarcity, had not for some time past been used for the settlement of debts of larger amounts, this formal modification in reality brought about no change.

At the same time, even after 1774, silver currency still retained its full legal position as a medium of payment—at least by weight.

The final abolition of the double standard, or bimetallism, did not come about until the end of the eighteenth century, and was then caused by a new disturbance in the ratio between the value of the two metals.

In the last quarter of the eighteenth century a gradual depreciation of silver as against gold took place. The average ratio between the values of these metals was, during the period 1771

to 1780, 1 : 14.64. A change then occurred in favour of gold. In the nineties the statutory ratio of the English currency (1 : 15.2) was reached, and finally even passed.

The decisive point had been reached. The minting of silver, which had heretofore been possible only at a loss, began to be profitable, and the minting of gold, which had heretofore been profitable, now became possible only at a loss. On the other hand, dealers in the precious metals who had been in the habit of melting down standard silver coins now turned their attention to the possibility of doing a profitable business by melting down gold coins. It became clear at once to all who understood these things that the old game would begin anew, that silver would now enter in large quantities into circulation and that it would force gold into the background. Large quantities of silver were in fact brought to the London mint for coinage.

The English government was thus faced with the problem whether it should acquiesce, accept silver and allow gold to vanish. Such an eventuality, however, was thought undesirable. Trade in general had indeed been very adversely affected by the scarcity and bad condition of the silver currency, but no one wished to see a satisfactory silver coinage introduced at the price of the much more convenient gold currency. The question was how to preserve the gold in circulation, notwithstanding the disturbance of the ratio of value. Should the melting down and export of gold coins be prohibited? Experience had shown that such prohibitions did not work. There seemed nothing for it but to forbid the entry of silver. If it cannot enter into the circulation, then it cannot force gold into the background, but it could so enter into circulation only in the form of coins, and only the State had the right of transforming bars of silver into coins.

If the State refused to strike coins from silver delivered at the mint, a stop would be put to the threatened silver invasion. The right way, therefore, of successfully defending the circulation of gold against the inroads caused by changes in the ratio between silver and gold appeared to be for the State to refuse to coin silver in unlimited quantities.

The English government was not averse from adopting this procedure, although a formal difficulty existed. From 1666 onwards the English mint was required to coin free of charge any quantity of gold and silver brought to it for that purpose. Everyone had, therefore, the right of demanding that the government mint should coin for him whatever quantities of gold and silver he desired. This right, which is of great importance in modern monetary systems, is known as the *free right of coinage*.

The English government did not, however, allow this to be

an obstacle in its path. Even before the silver already coined for private account had been returned to its owners, the mint was directed again to melt down the silver coins and to accept no further silver from private individuals for coining.

There can be no doubt but that this order was a violation of the existing law. But the step taken by the government appeared to be so obviously in the public interest that Parliament did not delay in legalising it.

With the abolition in 1798 of the free right of coinage of silver, England forsook the system of bimetallism and passed into a stage which bore the essential characteristics of modern currency.

The free right of coinage continued for gold alone, and this furnished the necessary conditions for the permanent connection between the value of the English monetary unit and the value of a definite quantity of gold. The English Mint minted in those days—and still¹ continues to do so—from an ounce of standard gold of $\frac{1}{12}$ ths fineness 77s. 10½d. for anyone free of charge. The price of an ounce of standard gold can accordingly never fall noticeably below this sum, which can always be obtained by taking gold to the mint. At the same time, in every 77s. 10½d. of English gold coins there is always—if we neglect the very small loss caused by wear—an ounce of standard gold. There is, therefore, no reason for anyone to pay for an ounce of standard gold much more than 77s. 10½d., so long as it is possible to obtain payment in gold coin at any time upon demand. The price of an ounce of standard gold in gold currency can accordingly, on account of the right of free coinage of gold, never deviate significantly from this figure of 77s. 10½d. so long as payment is made in gold currency or so long as gold currency can at any time be obtained in exchange for other English money without a premium being charged. A definite relation is thus established between unminted gold and gold coin.

The regulation which effectively stopped the silver invasion—that is, the abolition of the free right of coinage of silver—supplied at the same time the necessary condition for making silver coins independent in their value as money of the amount of metal they contained, and for thus attaching them organically to the gold currency.

As long as free coinage obtained also for silver, it was not possible for the silver coins of full standard value to deviate in their value as money from their legal content of silver, any more than it is possible for the gold coins to deviate from their gold content. The silver coins could, of course, fall below the value

¹ This is no longer the case. The right to bring bullion to the mint has, by the *Gold Standard Act*, 1925, been reserved exclusively to the Bank of England.

of their legal silver content by the amount lost through abrasion, and this loss was, to be sure, in the case of English silver coins of those days, very considerable. But it was not possible that they should ever rise higher in value than the value of their legal silver content. As long as the mint gave for a pound troy of standard silver ($\frac{37}{100}$ fine) 62s., the price of a pound troy of standard silver could not fall below 62s. in silver money, and the shilling could not rise in value above $\frac{1}{2}$ of a pound troy of standard silver. If the price of silver, expressed in gold currency, fell, then the value expressed in gold currency of the silver coins had to fall also. As soon, however, as the mint ceased to accept silver for coining, the owners of silver bullion might in given circumstances find themselves constrained to be satisfied with less than 62s. for a pound troy. The value of shillings could, of course, as the State from now onwards really exercised its monopoly of minting, rise above the value of the metal which it contained, but this only to the value of the gold equivalent of the shilling, as anyone could, of course, obtain 77s. 10½d. for an ounce of standard gold, and no one need give more than the gold equivalent established by this equation to secure English money for himself.

In practice, the silver coins, after the abolition of the free coinage of silver, maintained the value assigned to them in gold currency, notwithstanding the further depreciation in the price of silver and the considerable abrasion of the coins.

The abolition of the free coinage of silver and the minting of silver coins only to the extent to which they were necessary for trade—and then only for account of the State—came to be the means by which the value of the silver coins was separated from the value of the metal which they contained, and the means by which they could be connected effectively with a gold currency at a definite rating.

This holds good subject to one limitation, which follows from the above remarks.

The value of a coin can never in practice fall below the actual value of the metal which it contains, because the coin can be melted down at any time and used as crude metal. By limiting the extent to which the coins are minted, a value which does not correspond to the value of the metal can be attached to them so long as this value is greater than that of the metal. Any rating of the coins below the value of the metal they contain drives them into the melting-pot. This has been abundantly proved by past experience.

These experiences and considerations served as the principles on which the new order of things in the English monetary system was based. This new order of things began in 1816. For the first time a real *gold standard* was created. It did not take place

before that year because the Napoleonic wars had for the time being brought great disorder into the English monetary system.

The essential features of the gold standard system which was established by statute in England in 1816 are as follows:—

There is free coinage for gold only. This connects the value of the currency with the value of gold. The guinea, 21s. in value, was supplanted by a new gold coin, the sovereign, worth 20s. The silver coins are made with a silver content less than that necessary to bring their nominal legal value into strict correspondence with the existing ratio of value between gold and silver and with the gold content of the sovereign. They are in fact coined exclusively to the order of the government and in quantities not exceeding the requirements for silver currency. Whereas up till then 62s. were coined out of a pound troy of standard silver, the number was now raised to 66 shillings. The silver coins were thus reduced by some 6 per cent. in fineness, and this was done to keep them in circulation in the event of any future changes, even in favour of silver, occurring in the ratio between the two precious metals. In other words, provision was thus made to exclude the possibility of the value of their silver content rising above their nominal value, and so making it worth while to melt them down. The experience gained in the eighteenth century, which showed that only such silver coins remained in circulation as had through wear become reduced below their nominal value, was not in vain. The stringent restriction of the issue of silver currency of excessive nominal value to the absolute requirements of trade was intended to obviate disturbances in the relative values of gold and silver coins.

Finally, the quality of full legal tender currency was left to gold coins only. The legal tender limit of silver coins was restricted to amounts not exceeding 40s. It was decided that no one need accept more than 40s. of silver coins in payment. Thus silver currency was given its natural function in exchange, and the public were protected against the contingency of having to accept payment of larger amounts in the heavy and cumbersome silver money. This limitation of the function was further prompted by the consideration which had already led in 1774 to a limitation of silver money as a medium of payment, namely, that only coins which carried within themselves—*i.e.* through the material of which they were composed—their full value could rank as an unrestricted statutory medium of payment, and that creditors must be safeguarded against having to accept payment of larger amounts in a currency the true value of which was less than its nominal value.

The modern conception of token money is based on this limitation of function as a medium of payment. Whereas money possessing an absolute and unrestricted legal status as a medium

of payment is termed "current" (*kurantgeld*), we designate as *token money* those types of currency whose function as a medium of payment is limited by law to specified maximum amounts.

The entire silver currency was thus subjected in the English monetary system to the same principles as had previously governed merely currency of quite small denomination.

The English monetary system created in 1816 is called the *gold standard*, because gold, which alone is freely coined, stands in a fixed or standard relation to the currency and only gold coins have the force of full legal tender. Silver, on the other hand, is employed for token money, and is coined only to the extent sufficient to meet the commercial requirements for coins of small denominations which cannot be produced from gold.

The system appears somewhat artificial and complicated, and the necessary conditions for its establishment are a strong and powerful governmental authority and a well-developed legislative system. A number of writers, who later attacked the gold standard and urged the return to the double standard, or bimetallism, drew the conclusion that the entire gold standard system had been thought out round an official table, that the gold standard was just the work of theoretical doctrinaires, and that it had been substituted for the efficient double standard by a wholly unjustifiable overt act.

In reality, however, matters had developed just the other way. The English bimetallic currency had brought about a state of affairs which in effect amounted to a gold standard. The currency in circulation consisted almost exclusively of gold coins, the circulation of silver being restricted to badly worn coins in quantities barely sufficient for trade requirements. It was this actual state of affairs alone that gave rise to the gold standard theory.

We can summarise the process of development outlined above as follows :—

The gold standard arose from the striving after a uniform monetary system within the confines of which both precious metals would circulate side by side, each in the way most suited to it. This striving led to the gold standard after the lesson of centuries of experience had been learnt, viz. that it was impossible to reach the goal by way of bimetallism. All attempts to control by mere rating the fluctuations in the relative values of gold or silver had time and again proved failures. It had not, therefore, been found possible by this means to unite gold and silver coins in a self-contained system. These unsuccessful attempts had finally driven men to the elemental necessity of building up the monetary system solely on the basis of gold, which was better adapted to the requirements of highly developed economic intercourse, of rendering of set intention the silver coins inde-

pendent of the value of the metal they contained, and of embodying them as a coin of secondary rank, an auxiliary coin, a mere token money, into the unified currency system.¹

¶ 7. The Paper Standard

The relation in which currency stands to the material of which it is composed has, in the course of the general process of evolution previously outlined, undergone the following changes :—

Money and its component material appeared as distinct phenomena only with the invention of the coin. Metal, in the form of coin, began more and more exclusively to be synonymous with money; metal, in its crude form, ceased to be more than the raw material for money. The distinction was at first more apparent than real, as in its original conception the coin amounted to no more than an authoritative certification of a definite quantity of precious metal, but coin soon acquired a status of its own, an entity economically and legally independent and distinct from the metal of its composition. The value of money in coin form became an independent economic quantity, and money continued to be a legally self-contained entity, notwithstanding the multiplicity of the statutory and actual changes of its metallic content, and the consequent changes of its value in relation to the value per unit of the material of which it was made. But even in this state of affairs the actual (albeit fluctuating) metallic content was, on the whole, and taken over a long period, still the determining factor in the value of the various types of coin in their relation to each other and to the metal composing them.

When in the course of time the problem of co-ordinating the various types of coin made of various metals into a uniform monetary system came up for solution, it was seen to be absolutely necessary first to decide how to free a large category of coins from dependence, in so far as their value was concerned, upon the metal of which they were composed. As it was not found possible to establish a fixed ratio of value between the two important metals, it became clear that a uniformity of value of the several types of coin could be secured only by rendering the value of the coins of one of the metals independent of that metal, and by establishing instead a connection between it and the coins struck from the other metal. The problem has been successfully

¹ In the light of this inexorable logic of needs and facts which gave rise to the gold standard, the view put forward by Knapp that England adopted the gold standard somewhat by chance, and that the other countries followed suit only because of the need of a standard uniform with the British standard, is untenable (*Staatliche Theorie*, p. 266).

solved—in the manner explained in the preceding section—by the modern gold standard system. The silver coin incorporated in the system of a gold standard currency derives its value not from its silver content, but from the gold coins which form the basis of the system, and the value of the silver coins is thus indirectly connected with a specified quantity of gold. The value of such silver coin is no longer related to the value of its own metal, but to that of another metal with which the coins have no kind of outward connection. In so far, therefore, as silver coins embodied in a gold standard currency are concerned, the separation between the “intrinsic” value and the “money value” of the coins is complete.

But this separation is not complete in so far as concerns the relations of value between the currency taken as a whole, on the one hand, and the money metal on the other. The separation exists only for a part of the currency, namely, for the silver coins, and for the token money of small denomination minted from base metal. The gold coins, however, which form the basis of the system, remain related to the value of their gold content. Inasmuch as the value of the monetary unit is derived in this system from the gold coins, it follows that the closest connection still persists between the money and the gold metal. The value of the money, no matter of which metal the actual coins are composed, is merely connected with the value of a specific substance, namely, with the value of gold. Thus far, therefore, the bond uniting the currency with the world of economic commodities has, in so far as relations of value are concerned, not yet been severed.

In modern times, currency systems have arisen in which any such connection between the value of the money and the value of some other commodity is lacking—systems in the case of which the value of the currency is independent of the entire orbit of other economic goods, and is regulated by laws of its own.

Already in ancient times and in the Middle Ages, we find attempts to supplement the metallic currency which derives its value from its metallic content by a token money of no intrinsic value, or even to substitute such token money for it. When money, after the invention of the coin, developed into an independent category of goods, the production of which became the duty of the State, the same lofty view of the State's functions in creating money, and the unimportance attached to the intrinsic worth of the coin, a view caused by the debasement of the coinage, also led to attempts at assigning by State authority the character of money to pieces which were intrinsically valueless but derived their value from a definite sign placed upon them by the State, and at giving to them in their capacity as money a specific validity in terms of already existing money, from which a corre-

sponding value would attach to them as against other commodities. In modern times paper has been the substance from which such currency has been exclusively produced.

The causes leading to the issue of paper money tokens are to be found in the same needs of the State which had led to the debasement of the coinage. As in the case of coins struck with a content below their nominal value, so with these money tokens the aim was to keep them at their nominal value expressed in terms of the State currency. The most effective means to this end is the promise to redeem on demand these paper tokens at their nominal rate in terms of the other currency—mostly metallic currency of a standard value. This promise of redemption existed in advance in the case of the paper tokens issued by private individuals and banks, which tokens had their origin, not in the State's privilege of creating media of payment, but in the promise to pay given by private individuals and institutions which were well known to be capable of payment. These private fiduciary issues developed into bank-notes in the modern sense of the word. As long as this redeemability is not a dead letter, but an actuality, the value of the paper currency issued by the State, or of the bank-notes issued by private individuals, cannot materially deviate from their nominal value expressed in terms of metallic currency. The value of the paper tokens is thus, indirectly, closely connected with the value of a specified quantity of metal which forms the basis of the existing currency system.

In many cases, however, this support for the maintenance of the value of the paper tokens was destroyed. In place of redemption we frequently find, both in the case of the paper money of the State as well as in the case of bank notes, an inconvertible or "forced issue" (*cours forcé*; *Zwangskurs*). In other words, we find a command by the State that the notes issued by it or by the bank must be accepted at the nominal value assigned to them irrespective of whether they are redeemable or not.

When they cease to be redeemable, the notes change from being claims to metallic currency into an independent form of currency. They cease to have their value defined by the metallic currency which originally could be demanded for them, and they become the subject of independent valuation, distinct from the valuation of the original metallic currency, though only rarely leading to an absolute depreciation, corresponding to the worthless material of which this money is composed.

As soon as everyone is obliged to accept irredeemable paper currency at its nominal rate, the paper currency becomes a decisive factor in the movements of the values of the currency of the country. Whoever wishes to be paid in actual metallic currency must, if necessary, be prepared to accept this at a higher than the

nominal rate. The value of the unit of account gets further away from the value of the quantity of metal originally corresponding to it, in proportion as a premium is demanded for metallic currency or for the original metallic material of the coin, expressed in terms of paper money. The original metallic currency appears as an economic commodity, the price fluctuations of which become expressed in the actual currency in circulation in the country—that is, in the irredeemable paper money. Such a state of affairs in the monetary system, the characteristic of which is the separation of the unit of currency from the original metallic equivalent, we call a *paper standard*.

The history of the early examples of a paper currency show an unceasing and strong depreciation of the notes issued in terms of the original metallic currency. This history almost invariably shows a series of rapidly developing currency crises, which ultimately lead to an extraordinary or even complete depreciation of the paper currency.

The first paper currency system on a large scale was started in 1720, in France, as a result of the undertakings of Law.¹ The bank founded by Law issued notes which received the character of legal tender. The total amount issued rose with the development of the bank's undertakings, and with the Stock Exchange speculations encouraged artificially by the bank, to a figure of nearly three milliard livres. The collapse of the entire system led to great depreciation and to the ultimate abolition of the paper currency.²

The second French paper currency era, at the time of the Revolution, had a similar history. The National Assembly decided in 1789 to auction State lands and to anticipate the ultimate proceeds of these by the issue of "assignats." Originally these assignats were interest-bearing State bonds, and had the value of 10,000 livres each, but later (1790) they ceased to bear interest and were turned into a forced currency. They thus became in reality a paper currency, the smallest unit of which was ultimately reduced to a face value of three livres. The amount of this paper currency issued was for those times immense, and reached at the end of 1796 the total of 45½ milliard livres. Their value expressed in the original metallic currency fell in proportion, and amounted in 1796 to only about one-third per cent. of their original equivalent in metallic currency. Ultimately, they became absolutely worthless, notwithstanding the many attempts by the government to increase their value by ordinances and compulsion.

¹ John Law, Scots economist and originator of the "Mississippi scheme," was French Minister of Finance from the 5th Jan. 1720 to Dec. 1721.

² Cf. Thiers, *Law et son système des finances* (1826, American edition, 1859).

In *North America* during the Wars of Independence the Colonies issued, in order to obtain supplies for carrying on the war, a paper currency, the so-called "Continental Currency." This paper money became exceedingly depreciated in the course of a few years, and, in the year 1781, was exchanged for interest-bearing certificates of $\frac{1}{20}$ th of its face value.

Many such instances could be quoted. They all have this in common, that an economic system based on a paper currency appears like an acute malady which ends in the complete depreciation of the paper currency or in its redemption at a small fraction of its face value (devaluation). Neither public credit nor the control of the State over the monetary system had yet sufficiently developed to allow of a paper currency being retained in circulation for any length of time without a marked depreciation, or to make it possible to bring the currency ultimately back to its par value expressed in terms of the original metallic currency, and to replace it at that value by a metallic currency.

The phenomenon of countries having a paper currency over a long period, using that currency as a convenient substitute for metal currency, and in fact regulating their paper currency in a systematic way, is of recent growth.

The first modern paper currency in this sense appeared in England from 1797 to 1823. The Napoleonic Wars led to the freeing of the Bank of England from the duty of redeeming its notes, and the notes of the Bank were given a forced currency. At first no noticeable difference appeared between the value of these notes and the metallic currency. From 1801, however, a premium came to be demanded for metallic currency. This premium rose by 1810 to 20 per cent., and amounted in 1813 and 1814 to 30 per cent. and 40 per cent. In 1811 the acceptance of gold coins at a rate higher than their face value in notes, or the acceptance of notes at a rate below their value expressed in gold coins, was prohibited. These prohibitions had, however, no effect. Gold coins vanished completely from circulation, and the gap created between the value of the English unit of coinage, the pound sterling, and its original metallic equivalent showed itself in higher prices for gold bullion. After peace had been declared the gold "agio," or premium, fell rapidly and substantially. In other words, the value of the English currency began to approximate again to its original metallic equivalent. In the year 1819 legislation was passed making the notes again redeemable as from 1823.¹ By 1821 the gold premium had practi-

¹ [The Resumption Act provided for the convertibility of Bank of England notes into gold bar at a gradually ascending value. Whilst originally convertibility into coin was to take place in 1823, this date was anticipated, and full resumption took place in 1821.]

cally vanished. The value of the pound sterling was again fully equal to that of its gold equivalent, after having from 1801 onwards fluctuated independently below its gold value.

In this case, therefore, the paper currency did not lead to a permanent and complete depreciation of the paper tokens. On the contrary, the Bank and the State succeeded, notwithstanding the abolition of the redeemability of the paper currency and the worthlessness of the material of which it was composed, in preserving it at a high value, and ultimately in bringing it back to full parity with metallic currency.

The developments in paper currency were similar in many other modern States.

Just as the Napoleonic Wars had forced England to a paper currency, so did the Civil War force the United States of America in the first half of the sixties of the nineteenth century.

From 1861 onwards paper currency was put into circulation in increasing quantities. It was first redeemable. Soon, however (through a law of the 25th February 1862), irredeemable Treasury notes were substituted for it. These latter were given the character of full legal tender money (except for customs payments and for the payment of interest on State loans). In the law of 1862 the issue of this paper currency was limited to a maximum of 150 million dollars. This limit was, however, exceeded on many occasions, and was finally considerably raised by a law of the 13th July 1864 to 450 million dollars.

Already in 1861 the paper currency began to depreciate as compared with the original metallic currency. Gold went to a premium, and as the circulation of the paper currency increased the premium rose rapidly, and in July 1864 reached its maximum at 185 per cent. The paper currency filled the whole circulation more and more, and drove even the small token money out of circulation.

After the end of the Civil War steps were taken gradually to reduce the quantity of paper currency and to bring the monetary system gradually back again to its original position. The complete withdrawal of paper money met with strong opposition from interested groups, and in the end nearly 350 million dollars of paper money still remained in circulation. Nevertheless, the government succeeded in making the paper currency redeemable (from 1879 onwards) and in preserving its convertibility. From the middle of 1864 no further depreciation of the paper currency took place. On the contrary, the gold premium showed a substantial drop. By the middle of 1865 it amounted to no more than 50 per cent., and by 1879, when cash payments were resumed, it had vanished.

Here, therefore, we are dealing with another instance in which, notwithstanding the serious disturbance which the monetary

system suffered at first, the efforts at methodically regulating the paper currency in circulation were successful in avoiding a complete depreciation of that currency, finally even in re-establishing its redeemability and thus bringing it back to its parity with metallic currency.

Similar paper currency periods of shorter duration are found in France—from 1848–1850 (February revolution), and 1870–1877 (war with Germany). In both cases the Bank of France was allowed to suspend the convertibility of its notes. The deviation of the notes from their metallic currency basis was but slight. The premium to which gold coins rose amounted in 1848 to a maximum of 12 per cent., and in 1871 to only 2.4 per cent.

Prussia had an inconvertible paper money with a forced currency from 1806–1824. This differed in many respects from similar money in England, France, and most other States. First and foremost, this paper money, the so-called Treasury notes (*Tresorscheine*), did not consist of notes originally issued by a bank, whose convertibility had been suspended, but it was from the very beginning issued by the State as a paper currency. Secondly, it was not only constituted forced currency, but certain parts of the payments to be made to the Royal Treasury had compulsorily to be made in these notes. The element of compulsory acceptance was for a time (October 1806 to October 1807) suspended, and compulsory payment to the public Treasury merely was substituted for it. For a time again (October 1807 to February 1809) the Treasury notes were forced currency, but not at their nominal face value, and this not only as against the public Treasury, but also for private transactions. The depreciation of these Treasury notes amounted during the worst period (June 1813) to 76 per cent. In 1815 parity with metal currency was almost reached. A Ministerial Order, dated the 21st December 1824, provided for the substitution of Treasury bills for these notes.

Wars, revolutions, and similar occurrences, which led to shortage of money, have in practically all countries brought about periods of paper currency. In the cases dealt with above, it was found possible to re-establish a metallic currency after a short time. It was otherwise, however, where the financial strength of the State was not great enough to re-establish the metallic currency, either by the State redeeming its own notes in a standard metallic currency, or by the State making it possible for the central bank to redeem its notes by repaying the advances made to it by the bank. Paper lost its character of being something unusual, and, as its withdrawal within a measurable time could not be expected, the commercial world grew accustomed to it, and based its arrangements on it. Apart from a number of small States in

Europe and America which came to adopt a paper currency in the main through mismanagement, the existence of more or less permanent paper currency is found before the Great War in the case of Russia and Austria.

Russia had a paper currency from the end of the eighteenth century to the year 1899, with a short interruption between 1843 and 1854. The first period of this paper currency ended with a substantial depreciation of the paper rouble as against the ordinary silver rouble. In the year 1843 the old irredeemable rouble assignats were withdrawn from circulation, being exchanged for a new paper currency, the redeemable Imperial Credit Notes. This was done by 100 roubles in credit bills being given for each 350 roubles in assignats. As long as the credit bills were redeemable, a silver currency was again in effect in existence, but the Crimean War necessitated the suspension of convertibility in the year 1854, and the second period of Russian paper currency began with the rise to a new premium of the silver rouble. No material change was brought about by the appearance in 1850 of the credit bills as notes of the Russian Imperial State Bank. The premium on the silver rouble rose gradually to about 30 per cent. until the Russo-Turkish War in 1877 brought a considerable increase in the issue of paper money, and with it a large increase in the premium of silver roubles. The rate for the paper rouble was subject from now onwards to great fluctuations, and after silver had been demonetised in most civilised countries, and the free coinage of silver even in Russia had been suspended (1876), the value of the paper rouble was no longer measured on the basis of the original currency, the silver rouble, but by a comparison with foreign gold systems, mainly with the German standard. The Berlin rate of exchange for the rouble reached in that period its lowest point with 164 marks for 100 roubles in 1887. The highest point was reached in 1890 with 265 marks per 100 roubles. From 1894 onwards the clever operations of the Russian Treasury succeeded in stabilising the rate of exchange for the rouble in Berlin at about 220 marks in preparation for the introduction of a gold currency. The gold currency, the formal introduction of which was completed in 1899, corresponded to a rate of exchange for the rouble of 216 marks.

Austria had already in 1793, during the wars of the French Revolution, had recourse to paper money. This currency ultimately led to a very serious depreciation. The notes of the Vienna State Bank, which had been declared irredeemable, had in 1811 a value of only one-third of their original value. The substitution for them of a new paper currency had no result. Only the National Bank, which was founded in 1816, succeeded in re-establishing an orderly monetary system. The disturbances of

the year 1848 led to the note issue of the Bank being declared irredeemable. With this began a new period of paper currency. Side by side with the inconvertible bank notes, irredeemable State paper was issued. Attempts to re-establish cash payments in 1853, 1858, and 1866 broke down, in the first case by reason of the mobilisation which was necessitated by the outbreak of the Crimean War, in the second case by the outbreak of the war with Italy, and in the third case on account of the war with Prussia.

The monetary needs of the State were, at the most crucial moments, so strongly increased by these occurrences that the re-establishment of the silver currency had to be given up. The premium on silver rose in 1850 to 50 per cent., and in 1859 it was 53 per cent. From the beginning of the seventies, during the period of silver depreciation, the value of the Austrian paper currency remained relatively stable compared with foreign currencies. The premium on silver fell continually, and was finally extinguished. But as in the case of Russia, so also in Austria a fixed ratio of value between the currency and silver, the original currency metal, became of little importance. It was, however, of importance to establish a fixed relation between the Austrian currency and the currencies of foreign countries based on gold. Austria accordingly turned away from silver, abolished the free coinage of silver, and began to make preparations for the re-establishment of its monetary system on the basis of a gold standard. The Act of 1892 gave to the new unit of currency—to the crown (equal to half a gulden)—a gold value of about 85 pfennigs. As the Austro-Hungarian Bank continually delayed to formally undertake the redemption of its notes in gold, the rate for Austrian money was at times a few per cent. below par, even in the early years after 1892. On the whole, however, it was possible right up to the outbreak of the Great War to keep the Austrian currency at the gold parity given to it by the new currency laws.

The few instances here quoted are cases of a paper currency, the value of which does indeed deviate from that of its original metallic equivalent, but which is not subject to rapid and, in the long run, complete depreciation; indeed, the currency remains in circulation for many decades with, taking it all round, a certain stability of value, although now and then considerable fluctuations take place.

The Great War opened a new era for paper currency, the characteristics of which will be examined in detail elsewhere in this work. The actual importance of the phenomena characterising this period is far greater than that of all previous periods of paper currency, if for no other reason than that all belligerent countries, except the United States of America, and a certain number of neutral States, found themselves under the

necessity of abolishing, or at all events of restricting, the convertibility of their paper currency into metallic money. Furthermore, because the issue of paper currency in the several States took on proportions hitherto not known or even imaginable, and, finally, because in some of the States most heavily hit by the War, by internal disturbances and by the conditions of the peace treaties, the currency became, as compared with its original metallic equivalent, depreciated to an absolutely fantastic degree. One need only point out here that the German paper mark stands at present (end of January 1923) at a value of only one ten-thousandth of its original gold value, whilst the depreciation of the Russian rouble can scarcely be expressed in figures.¹

Nothing radically new has, however, been brought about by this period of paper currency. The lessons previously learned as to the nature of a paper currency have simply received confirmation. The movements in currency value are not determined in this case either by the worthless substance of the currency, or by its original metallic equivalent, or again by any other commodity of value. The currency remains throughout not only in its nature, but also in the movements of its value, essentially distinct from and independent of, all other classes of economic goods.

¶ 8. Metallic Currencies with Restricted Coinage

In the sphere of modern monetary systems a similar phenomenon to that of paper currencies is presented by metallic currencies with a restricted coinage. Already in the gold standard system we came across silver coins which had been given, in consequence of restrictions on the quantities struck, a value in excess of their intrinsic value. This value was in fact derived from the associated gold currency, and they were thus placed in connection with the metal gold. Now, it has happened in many cases in the course of the more recent monetary developments that the coinage of silver, which was the basis of the currency, was restricted or wholly suspended, without at the same time gold coins with unrestricted coinage being introduced, and without the rating of the silver coins in relation to the gold coins. In these cases, as will be seen from examples to be quoted, the consequences were different from those which resulted when bank notes and paper currency became inconvertible. When paper money which has been given a legal tender power is made inconvertible, it may happen that the value of the currency will fall *below* the metallic equivalent on which the unit of account was originally based. This may happen because no one then has

¹ [These figures were, of course, almost negligible compared with the depreciation of the paper mark at the end of 1923.]

the right of demanding, or the certainty of obtaining, for his paper money its full nominal equivalent in metal currency. When, however, the free coinage of the original currency metal is suspended, it is possible that the value of the country's currency might rise *above* that of the metallic equivalent on which the unit of account was originally based, because no one now can demand or obtain with certainty in exchange for the unminted metal an equal weight (with, of course, a small deduction for seigniorage) of coin.

This possibility was first noticed, and was in fact largely remarked upon, when in 1873 the Netherlands suspended the free coinage of silver without at the same time taking any other steps for the reform of the monetary system. The strong connecting link which had heretofore existed between the value of silver and the value of Dutch money was thereby severed. The value of Dutch silver coinage could now rise above the value of the quantity of silver it contained, because the demand for Dutch currency could not be satisfied by any additional coinage of silver bullion. Such a rise did in fact take place, and to the extent that, while silver became depreciated in relation to gold, Dutch silver coinage rose substantially in value in terms of the gold currencies of countries on a gold standard. Whilst at the beginning of 1875 the price of silver in London fell to about $57\frac{1}{2}$ pence, the rate of exchange for Dutch money stood at only 11.6 gulden for one pound sterling, instead of at 12 gulden as heretofore. This showed that the value of the Dutch gulden had risen by about 10 per cent. above the value of the silver it contained. The value of silver was now only the lower limit for the value of the Dutch currency. The Dutch gulden could not fall in value below that of the silver in it, but it could rise above it to an unlimited degree.

This state of affairs was brought to an end in the year 1875 with the introduction of a gold coin, the 10-gulden piece, which was freely coined and was given the force of full legal tender at its face value. The 10-gulden coin contains 6.72 grams of standard gold of $\frac{9}{16}$ ths fineness. From 1 kilogramme of fine gold, 1653.43 gulden can be coined, and as the seigniorage on a kilogramme is 5 gulden, a kilogramme of fine gold can at any time command a price of 1648.43 gulden. Below this price gold cannot sink in terms of Dutch money, and at the same time the value of the Dutch currency can never rise above the gold equivalent corresponding to this price. As long as the metal in the silver gulden is worth less than the gold equivalent of the gold gulden, and as long as the Dutch government does not take upon itself the obligation to convert silver gulden upon demand by giving gold gulden in exchange, it is always possible that the silver gulden may not reach its full value in gold and that gold currency

may rise to a premium. Such a state of affairs would then have points of similarity with that of a paper currency, but there would be this difference, that any depreciation of the Dutch currency could not be unlimited, but would be limited in degree by the value of the silver contained in the silver gulden. In point of fact the Dutch currency remained at gold parity right up to the Great War.

A second case of this kind occurred when in June 1893 the Indian mints stopped coining silver. This step was intended to render Indian currency independent of silver which was continually falling in value, and to bring it into a fixed relation with the value of the English gold currency. To secure the latter result it was provided at the time when the free coinage of silver was suspended, that the Indian mints should give, in exchange for English gold coins brought to them, Indian silver rupees at the rate of 15 rupees for a sovereign or one rupee for every 16d. in English gold currency. The consequence was that the value of the rupee could rise above the value of its silver, not—as was the case with the Dutch silver gulden between 1873 and 1875—to an unlimited extent, but only up to the value of 16d. in English currency, the value of which was in turn determined by a specific quantity of gold. The value of the silver contained in a rupee, expressed in English money, was about 8½d. when the price of silver stood at about 22d. per ounce of standard silver, the lowest price ever quoted in London before the War. Thus the value of the rupee can fluctuate in English gold currency, given the price of silver at 22d., between 8½d. and 16d. A rise in the value of silver as against gold would narrow down these limits, whereas a depreciation of silver would widen them.

The actual course of the exchange rate of the rupee was as follows:—

In the first years after the suspension of free coinage of silver there was a considerable drop in the price of silver. It went down in London in the first months of 1894 to 27d. The rate of exchange of the rupee also showed a tendency downwards, but this was much less marked than in the case of silver. The lowest rate was reached in January 1895 with the figure of 12·41d., although the price of silver at the time (27·2d.) corresponded to a rate of only 10·1d.

Even then the value of rupee coinage stood 23 per cent. higher than did the value of the silver it contained. Since then the rate of exchange of the rupee has gradually risen, with but few interruptions, independently of the fluctuations in the price of silver. It reached 14d. at the beginning of 1896, rose by the end of 1897 to 15½d. and in January 1898 was the first time quoted at its gold parity figure of 16d. At this latter figure it remained

with but small deviations until the price of silver rose again during the War, and the simultaneous depreciation of English currency in terms of gold brought about fresh disturbances. From the beginning of 1898 a fixed ratio of value actually existed between gold and the rupee, although it was possible that at any time the value of the rupee might again fall below the new gold parity and might approach the value of silver. The further possibility existed, however, that the value of the rupee would, if the price of silver rose, be higher than its scheduled gold equivalent of 16d. in terms of English currency.

The third and most interesting of the cases falling under this heading is that of the Austrian currency between 1879 and 1892.

As already stated, Austria had from 1848 onwards a paper currency which had replaced the original silver currency. In the first years of silver depreciation the value of the Austrian paper gulden remained relatively stable, as against the currency of countries on a gold standard, and the silver agio fell continually until it was completely extinguished at the turn of the year 1878-79. This process has been called "the self-regulation of the Austrian currency," because equality of value between the inconvertible paper money and the silver gulden came about without any measures being taken by the State or by the Austro-Hungarian Bank.

From the moment when equality of value between the paper and the silver gulden had again been established the Austrian currency could not, in the event of further depreciation of silver in terms of gold, remain stable in relation to the currencies of countries on a gold standard. As anyone could, with the free coinage of silver, obtain 45 gulden (after deducting 1 per cent. for seigniorage) for 1 lb. weight of standard silver, the value of the gulden could not rise markedly above the value of $\frac{1}{45}$ th of a lb. weight of silver. If, however, the value of silver, as against that of gold, were to fall, the necessary consequence would be a fall in the value of the Austrian silver gulden in terms of the gold currencies of foreign countries. At the same time, the paper gulden would not be quoted higher than the silver gulden, because—quite apart from the fact that the paper gulden was originally only a claim for payment in silver gulden—the silver gulden was legal tender for all payments just as the paper gulden. In their economic and legal use as currency within the Austro-Hungarian State both forms of money stood on the same footing; that is why the paper gulden, which could only be used as money, could never rise in value higher than the value of the silver gulden, whereas, on the other hand, the silver gulden, which in addition to its use as currency could also be used as metal, had to be valued higher than the paper gulden as long as the metallic

content of it could, even in Austria-Hungary, command a higher price than 1 gulden of Austrian "paper currency."¹

The Austrian Government was now unwilling to allow its currency circulation to be filled with the silver which was pressing to be converted into coin. The aim which had previously so often been vainly pursued, of re-establishing the circulation of silver, had, as a result of disturbances in currency politics, ceased to be desirable. Above all, however, it was not desired to depress the rate of exchange of the Austrian currency on countries on a gold standard through a fall in the price of silver, and for that reason the free coinage of silver was suspended in the first months of 1879, by the issue of an ordinance to that effect.

This Order preserved the inconvertibility of the paper currency and created a most peculiar state of affairs. Till then the movements in the value of Austrian currency were unlimited in a downward direction, because no one had the right of demanding and obtaining metal currency for the paper gulden, which was intrinsically valueless, and the Austrian currency was faced with the possibility of an unlimited depreciation. This possibility continued to exist even after 1879, because the convertibility of the paper currency had not been resumed. On the other hand, up to 1879 the fluctuations in value of the Austrian currency had an upper limit corresponding to the bullion value of the silver gulden. The cessation of the free coinage of silver removed this limit, and the value of the Austrian currency could, as in the case of the value of the Dutch money from 1873 to 1875, rise to an unlimited extent above its silver equivalent. The reform laws of 1892, however, which introduced a gold coin of full legal tender, set an upper limit to the value of Austrian currency corresponding to the gold equivalent of the new unit of account, the crown. From 1879 to 1892, the value of the Austrian coinage could move up or down without any limit set either by a precious metal or by any other economic commodity. The actual course of events was that the value of the gulden kept above the ever-falling value of silver. Already in 1879 the value of the silver in the gulden was only 95.85 kreuzer, and this figure fell further in 1886 to 91.95 kreuzer and to 84.69 kreuzer in 1891.

¶ 9. Importance in the History of Money of Currencies Freed from their Metallic Bases

Paper currencies, as well as metallic currencies with restricted coinage, differ from other monetary systems in the following

¹ A "disagio" of the silver gulden as against the paper gulden, and similarly an "agio" of the paper gulden as against the silver gulden, were thus equally out of the question.

respects. In their case values are formed quite freely, or at all events within wide limits. In the other cases, however, we find that on the gold standard basis, the value of money is directly dependent upon that of gold, in currencies on a silver standard upon that of silver, in bimetallic currencies upon that of the metal overvalued under the law, and in currencies on a parallel standard we find two independent systems—the one based on gold and the other on silver—operating side by side. All these systems have this in common—the value of the currency is bound up with that of a particular metal, and the principal coins, from which the other types of coin in the system derive their value, are evaluated by their metallic content. In currencies with a restricted coinage, however, the value of the coins often considerably exceeds their intrinsic value, and this is always so in the case of paper currencies which have any value at all.

The question arises as to what is the basis of the money value of these currencies.

In our economic machine money performs an absolutely vital function in economic intercourse. Innumerable contracts to pay are always in existence, and all these are expressed in terms of money. The State has managed to secure for itself the exclusive right of producing the money required in economic intercourse and to declare, for the settlement of outstanding money debts, coins and paper notes of one kind or another as legal tender. If, now, the State stops coining its metallic currency, and thereby the currency in circulation ceases to multiply, and if at the same time there is an increase in the money requirements of home trade and in the demand on the world's markets for the currency of the country in question, it follows that the value of the currency must rise above that of its metal. The premium on coin is created by the fact that in the existing economic and legal state of things only coined and not the uncoined metal can function as money, and that the State refuses, when asked, to convert metal into coins.

In the case of inconvertible paper money also, value attaches to the currency exclusively by reason of the State having declared it legal tender for the payment of all debts and taxes. The State thus in fact confers upon it the privilege of fulfilling all the economically indispensable functions of money.

Both these types of money, therefore, derive their value not from that of their substance, nor again from any implied promise to pay, but solely from their acquired character as a statutory medium of payment.

In this sense these types of currency, particularly inconvertible paper money, constitute a milestone in the history of the development of money. They represent a state of affairs diametrically opposed to that from which money began to evolve. Money

began with the occasional employment as a medium of exchange of commodities whose essential functions were those of subserving ordinary consumption. The same commodity combined within itself the functions of subserving ordinary economic needs (*e.g.* as an ornament) and those of a medium of exchange. Gradually the circle of economic goods used as media of exchange was narrowed down, whilst at the same time the entire circle of exchangeable commodities was more and more widened. In the long run the precious metals became the sole media of exchange, and their functions as such finally received their distinct embodiment in the coin. In this form only were the precious metals money, in an uncoined state they soon came to be just ordinary economic goods. The coin, which at first was only a piece of metal whose weight and fineness had been authoritatively certified, freed itself ultimately from this basis, and became an independent entity with changing content. Its varying metallic content gave it a value which became the unit of measurement of value generally. Money and other economic goods had henceforth only one thing in common, namely, the connection which still existed between the value of money and that of its actual metallic content. But gradually even this last connecting link was loosened. Individual coins and groups of coins—first those struck from baser metals and the small alloyed silver coins, and then the entire silver coinage within the gold standard systems—were rendered independent in their value of the substance composing them, and were placed in a relation to a third article of value with which they had constitutionally nothing in common. In currencies with restricted coinage the value of coins, as money, rose above that of their original basic metallic equivalent without any derivation from a third substance. Finally, we find in the inconvertible paper currency a type, the substance of which is of no intrinsic worth, and whose value is accordingly derived exclusively from an *ad hoc* assignment to it of the power of performing the functions of money.

This closes the circle. Originally certain economic commodities could also fulfil the, for them, subsidiary functions of money. Metallic coins can at any moment, by being melted down and recast, be converted into articles of ordinary utility, and their value is seen to have been, at first wholly, and later in part, dependent upon the possibility of such conversion. Paper currency, however, is utilisable only as money. As a commodity it is worthless. It is the pure embodiment of monetary functions.

§ 2. DEVELOPMENTS IN THE POSITION OF THE PRECIOUS METALS AND OF CURRENCY STANDARDS SINCE THE DISCOVERY OF AMERICA

PREFATORY NOTE.

THE first section gave a general outline of the history of monetary development. It showed how the conception of money was gradually evolved and how money became gradually, and ultimately almost completely, differentiated from other economic commodities. It gave, further, a sketch of the course of development of the various monetary institutions, and showed how it has gradually been found possible to co-ordinate the various types of money of different substances into a self-contained monetary system.

In a general historical sketch of this kind individual events in the sphere of the monetary systems could only be of interest, and were only explained, when they were of definite importance in the development of money and illuminated in a typical manner the progress from a lower to a higher stage. We were concerned simply with selecting from the multiplicity of events and phenomena those which appeared essential.

The following section will contain other matter. It will deal with the concrete shaping of conditions in the sphere of the precious metals and of currency. It will sketch the history of production of the precious metals, of their utilisation for monetary purposes, and of the forces controlling their value. It will also deal with the manner in which the different systems of currency spread over the several civilised countries. The actual events from which the existing international currency organisation grew up will be enumerated and set down in a manner best calculated to bring out clearly their intrinsic importance as against their importance for a theoretical conception of things. In the first section, when we were dealing with the part played by the gold standard in the development of money, it was, for instance, quite sufficient for our purpose to examine only the first stages of the gold standard system in England. The manner in which this system spread in other civilised countries is, of course, of eminently practical importance, but the explanation of it would have added nothing of value for a theoretical conception of the development of money. The place for the study of such events and circumstances is in this section. It is, of course, not possible to keep the two lines of examination entirely distinct. Just as in the first section actual events and phenomena had to be quoted, so it will also be necessary continually to refer in this section to the theory of the development of money. An outline will here be

given of all the more important events, during the period nearest to us in point of time, from which the historical development of money is deduced. The section should, therefore, contribute to an understanding of the actual circumstances of the international bullion and monetary position, just as the first section contributed to the understanding of the position of money in the economic sphere of things, and of the internal arrangements of modern monetary systems.

CHAPTER III

THE PRODUCTION OF THE PRECIOUS METALS AND THE RATIO OF VALUE

¶ I. General Remarks concerning Statistics of Production of the Precious Metals

BOTH the precious metals, gold and silver, have for thousands of years past been the most important raw material of money in civilised countries. The properties possessed by them, which render them specially suited to the performance of the functions of money, have already been analysed. It is true that more recent developments have given rise to a monetary system which appears to be absolutely independent of any metallic standard; but this system is nevertheless generally regarded as an unhealthy condition of monetary institutions, and all States which were forced by political or economic crises to adopt a paper currency are ceaselessly striving to abolish it.¹

In view of the special position which the precious metals occupy in the monetary systems, it follows that the rate of production of these metals is of extreme importance. The extent to which gold and silver were produced had necessarily an important influence on the extent to which metallic currencies came into use, and accordingly on the intensive and extensive development of monetary institutions. The recurrent disturbances, of which history shows many instances, in the relation between the production of gold and that of silver are a most important factor in the shaping of the currency conditions in civilised countries. This relative production has, in addition, had a considerable influence not only on the value of money as such, but also on the ratio of value subsisting between the two metals.

¹ This *practical* estimate of paper currency by no means excludes the necessity of paper currency being studied and analysed theoretically as an actual form of *monetary system*, in the same way as any metallic monetary standard. Knapp is absolutely right in pointing out that in a theoretical study there are no abnormal phenomena and no exceptions but only special cases (*Staatliche Theorie*, p. 29).

We must, therefore, seemingly begin this new section with a short study of the development of the production of the precious metals.

It is very difficult to collect statistics of production of the precious metals for remote periods of time. More or less reliable data are available only for the periods subsequent to the discovery of America, which event can be regarded as the beginning of the modern stage of monetary systems, just as it is the point from which modern economic, political, and social conditions can be made to date. For the possession of such statistics we are indebted in the first place to the industrious and conscientious researches of Adolph Soetbeer.¹ His work has been supplemented by the valuable labours of Lexis,² and by the annual reports of the Director of the Mint of the United States of America. Notwithstanding all the care which has been bestowed upon the establishment of reliable data for the production of precious metals, the statistics relating to periods prior to the middle of the seventies of the nineteenth century all fall within the terms of the following observations of Soetbeer:—

“A survey of the statistics of production of the precious metals in early days will call forth from anyone who understands these things the remark that even the tables upon which the largest amount of conscientious effort has been expended and which have been put together after repeated tests are still unsafe. Some figures will be seen to be rough estimates, liable to considerable margins of error, and now and again they are based on objective assumptions of probability, which in turn are based on few and uncertain data. Unless, however, one is prepared altogether to do without connected and comprehensive statistics of the precious metals, then these approximate estimates and assumptions are indispensable as auxiliary data.”

It is not surprising that, with this uncertain basis, the conclusions to which various students have come should greatly deviate from each other for particular periods. On the whole, the figures which are held to be most trustworthy are those of Soetbeer for the period up to the end of the eighties of the nineteenth

¹ Cf. particularly *Edelmetallproduktion und Wertverhältnis zwischen Gold und Silber seit der Entdeckung Amerikas bis zur Gegenwart*, Gotha, 1789; *Materialien zur Erläuterung und Beurteilung der wirtschaftlichen Edelmetallverhältnisse und der Währungsfrage*, 2nd ed., Berlin, 1886; *Literaturnachweis über Geld und Münzwesen*, Berlin, 1892. [An English translation of Soetbeer's *Materialien* will be found appended to the Report of the Gold and Silver Commission, C. 5512 of 1888.] Adolph Soetbeer (1814–1892) was professor at the University of Göttingen.

² Lexis, Wilhelm (1837–), joint editor with Conrad, Elster, and Löning of the *Handwörterbuch der Staatswissenschaften* and of the *Jahrbücher für Nationalökonomie und Statistik*.

century, and for subsequent periods those of the Director of the American Mint. From the beginning of the seventies the principle on which the statistics of production of the precious metals are calculated have made them so reliable and complete that important deviations from reality and marked differences in the results of individual investigations are no longer possible. From the time when the question of the "standard" of currency became pressing, such practical interest attached to all circumstances affecting the precious metals that the necessary care and attention was bestowed in all important producing areas to circumstances regarding the production of the precious metals.

¶ 2. General Survey of the Development of Production of Gold and Silver¹

Of the two precious metals, and probably of all metals, gold was the first to be mined by man. The reason for this lies in the fact that gold occurs almost always either in a pure state or in combination with silver. It is found frequently in sand and river deposits in the form of little nuggets and flakes which must have attracted the attention even of primitive man on account of their brightness, due to the resistance of gold to air and water. Not only is gold easily found, but it is also plastic; and these qualities, combined with the glitter of the metal, made it particularly adapted for the production of all kinds of ornament. It is not, therefore, to be wondered at that primitive gold ornaments have been found even among savages, wherever gold is to be found in rivers or in alluvial deposits.

Silver is found under less favourable conditions. The white metal occurs in relatively small quantities in its pure state, and is mostly found in combination with chlorine, lead, sulphur, arsenic, and antimony. Its production usually requires regular mining operations and an advanced knowledge of mining, and is not only attended with greater difficulties than the mining of gold, but is also more difficult than that of copper. It is, therefore, by no means unlikely that the Aryan nations came to know silver only after gold and copper were already known.

Regarding the production of gold and silver in ancient times and in the Middle Ages we have but sparse data, the reliability of which—at all events in so far as quantities are concerned—is more than dubious. We know from individual inscriptions, etc., that in Western Asia considerable quantities of gold were already found in the ninth, eighth, and seventh centuries B.C. Thus a

¹ Cf., in addition to the works of Soetbeer already cited, Lexis' articles on "The Precious Metals," "Gold and Gold Currency," and "Silver and Silver Currency" in the *Handwörterbuch der Staatswissenschaften*.

cuneiform inscription states that Sennacherib, King of Assyria, imposed upon Hezekiah, King of Judah, a payment of 30 talents of gold and 800 talents of silver.¹ It is certain that at the time of the Lydian kingdom in Asia Minor substantial quantities of gold were obtained from river deposits. In Upper Egypt and Nubia there was regular gold mining in the quartz quarries. Gold was also imported into Western Asia in those days from Arabia, the East Coast of Africa, and possibly from India. In Grecian days gold was obtained by quarrying on the Isle of Thasos, in Thrace, and in Macedonia. These mines were worked to some extent even in the times of the Romans. At the time of Polybius much gold was obtained from the alluvial lands of Aquileia. Rich deposits were obtained, above all, from gold washings and gold mines in Spain. To these were added in Imperial days the mines of what are to-day Salzburg and Carinthia, as well as of Galicia. It is certain that in the first centuries A.D. the production of gold fell considerably.

As to silver, it is not quite clear how the undoubtedly large supplies of this metal came into Babylonia. The rich silver mines of Spain were probably worked by the Phœnicians in early days, perhaps even towards the end of the twentieth century B.C. Later—at the height of the Athenian power—the mines of Laurium produced important quantities. In Cyprus, Greece, and in Asia Minor silver was produced sporadically. In Roman times the most important supplies of silver came from the mines of Spain. The working of these mines appears to have been pursued with special intensity first by the Carthaginians, after the first Punic Wars, and then by the Romans. Just as in the case of the production of gold, the mining of silver continually diminished during the first centuries A.D. In the fifth century it appears to have ceased altogether in the Roman Empire.

The fifth, sixth, and seventh centuries of the present era brought with them an extraordinary diminution in the supplies of the precious metals in Western Europe, as a result of the cessation of production and the considerable flow of precious metals to the Byzantine Empire and to the Far East.

From the days of the Carolingians the production of both metals was again on the increase. The gold washings from French and German rivers, which had never altogether ceased, appear to have been pursued with greater intensity. The working of the gold mines in Hungary and Transylvania was probably taken up again in the eighth century. At the same time, discoveries of

¹ [A talent of gold on the Assyrian standard = 387,000 grains. In the German edition Helfferich states that the payment amounted to 300 talents of gold, and makes no mention of silver. This, however, is not in conformity with the inscription on Sennacherib's cylinder.]

gold are thought to have been made in Bohemia where gold washings gave increasing results from the eleventh to the fourteenth centuries. The time of maximum gold production in Western Europe was the fifteenth century, during which the Salzburg mines also produced substantial quantities. In those days, by reason of the gradually increasing importance and expansion of trade, important quantities of gold were brought to western Europe even from Africa.

Silver production appears to have recovered quicker than gold production from the lowest level reached in the three centuries before the Carolingian period. The more favourable conditions for silver are shown by the fact that the gold solidus, which even the Merovingians had retained, began to be gradually replaced by silver currency. Moreover, the reform of the currency system undertaken by Charlemagne was based throughout on silver. Possibly in the days of Pippin,¹ but at all events in the days of Charlemagne, the silver mines of Melle,² in Poitou, were being worked. In the ninth century workings appear to have been started successfully in the silver mines in the Lebertal, in Alsace. From the second half of the twelfth century—to the end of the fifteenth, however, these workings were in abeyance on account of technical difficulties (water). Not long after Lebertal, the mines in Breisgau³ began to be worked (the existence of workings in 1028 has been proved). There was also silver mining in Maasmünster. Considerable importance attached to the production of silver in the Harz mountains, which commenced about the year 970 and reached its culminating point in the twelfth century. In the second half of the twelfth century silver mining was also undertaken in the Mansfeld and Freiberg districts of Saxony. From Bohemia, from the beginning of the thirteenth century to the end of the Middle Ages, came larger quantities of silver than any yet produced elsewhere. Towards the end of the thirteenth and the beginning of the fourteenth centuries the greatest production appears to have been obtained from this source. Hungary, especially in the neighbourhood of Selmeczbanya, had been producing silver even earlier.

Outside the area of the modern German Empire and Austria-Hungary the production of gold as well as of silver was considerable throughout the Middle Ages. Sweden, Norway, Spain, and Italy produced only small quantities.

On the whole, notwithstanding the relative rise in production, the total amount produced remained small up to the end of the

¹ Pippin III, the Short, King of the Franks (d. 768), was father of Charlemagne (742-812).

² The name is derived from "Metallum."

³ In the grand duchy of Baden.

fifteenth century. Lexis estimates the annual production of silver in Europe in the eighth and ninth centuries at about 1 million silver marks (silver mark = $\frac{1}{3}$ silver taler = $\frac{1}{180}$ kg. of silver), in the tenth and eleventh centuries at about 2 million, in the twelfth and the first half of the thirteenth centuries at 3 million, and from 1250 to 1450 at 5 million silver marks. There is no doubt that the value of the gold produced in the last two centuries of the Middle Ages was far greater than that of the silver. Lexis is inclined to estimate the European production of gold together with the gold imports from Africa at an average of 10 million gold marks a year in the fourteenth and fifteenth centuries, when gold coinage was gradually supplanting silver coinage in international trade.

A complete change in the provisioning of Europe with precious metals began in the sixteenth century. The discovery of the New World, with a wealth of precious metals far above anything previously imagined, marks the beginning of a new era. This era cannot be compared with the previous periods in regard to the amounts produced; but the ground had been prepared for this radical change by the renewed increase in the European production of precious metals in the second half of the fifteenth century, particularly in the case of silver production, which in Europe had increased in proportions which were huge in the then existing conditions.

For the new period, which began with the discovery of America, we have much greater and more reliable statistical material. This material has been the subject of the most detailed study by German savants. Henceforth, therefore, we are on firmer ground.

In order to survey the course of production of the precious metals from the discovery of America onwards, we give overleaf the average figures of the total production of the world for longer periods. The figures up to 1890 are based on the statistics of Soetbeer, and for the later periods on data supplied by the Director of the American Mint.

Towards the beginning of the fifteenth century the silver mines in the Saxon Erzgebirge, in Bohemia, and in the Tyrol began to furnish considerable supplies.

At the same time, large quantities of gold dust were brought to Europe by Portuguese sailors from parts of the African Coast then being discovered. From America at first (that is, before the conquest of Mexico and Peru) there came only gold, and this in not very considerable quantities.

Soetbeer estimates, as will be seen from the following table, that for the first period covered by his statistical researches, extending from 1493 to 1520, the yearly production of gold was

Statistics of the World's Production of the Precious Metals

(The figures relate to annual averages of the several periods.)

Period.	Gold.		Silver.		Of the Total Production.			
	Kg.	1000 Marks.	Kg.	1000 Marks (market value).	Gold.		Silver.	
					per cent. by		per cent by	
					weight.	value.	weight.	value.
1493-1520	5,800	16,182	47,000	12,220	11.0	57.0	89.0	43.0
1521-1544	7,160	19,976	90,200	22,370	7.4	47.2	92.6	52.8
1545-1560	8,510	23,742	311,600	76,965	2.7	23.6	97.3	76.4
1561-1580	6,840	19,083	299,500	72,779	2.2	20.8	97.8	79.2
1581-1600	7,380	20,590	418,900	98,860	1.7	17.2	98.3	82.8
1601-1620	8,520	23,771	422,900	96,412	2.0	19.8	98.0	80.2
1621-1640	8,300	23,157	393,600	78,326	2.1	22.8	97.9	77.2
1641-1660	8,770	24,468	366,300	70,330	2.3	25.8	97.7	74.2
1661-1680	9,260	25,835	337,000	62,682	2.7	29.2	97.3	70.8
1681-1700	10,765	30,034	341,900	63,593	3.1	32.1	96.9	67.9
1701-1720	12,820	35,768	355,600	65,075	3.5	35.5	96.5	64.5
1721-1740	19,080	53,233	431,200	79,772	4.2	40.0	95.8	60.0
1741-1760	24,610	68,662	533,145	100,764	4.4	40.5	95.6	59.5
1761-1780	20,705	57,767	652,740	124,021	3.1	31.8	96.9	68.2
1781-1800	17,790	49,634	879,060	162,626	2.0	23.4	98.0	76.6
1801-1810	17,778	49,600	894,150	160,053	1.9	23.7	98.1	76.3
1811-1820	11,445	31,932	540,770	97,339	2.1	24.7	97.9	75.3
1821-1830	14,216	39,663	460,560	81,519	3.0	32.7	97.0	67.3
1831-1840	20,289	56,606	596,450	105,572	3.3	34.9	96.7	65.1
1841-1850	54,759	152,777	780,415	137,353	6.6	52.7	93.4	47.3
1851-1855	199,388	556,308	886,115	160,387	18.4	77.6	81.6	22.4
1856-1860	201,750	562,899	904,990	164,709	18.2	77.4	81.8	22.6
1861-1865	185,057	516,326	1,101,150	199,308	14.4	72.1	85.6	27.3
1866-1870	195,026	544,139	1,339,085	239,696	12.7	69.4	87.3	30.6
1871-1875	173,904	485,207	1,969,425	344,640	8.1	58.5	91.9	41.5
1876-1880	172,414	481,045	2,450,252	382,062	6.6	55.7	93.4	44.3
1881-1885	154,959	432,300	2,808,400	424,800	5.3	50.4	94.7	49.6
1886-1890	169,869	473,934	3,387,532	448,000	4.8	51.4	95.2	48.6
1891-1895	245,170	684,031	4,901,333	554,200	4.8	55.9	95.2	44.1
1896-1900	387,257	1,080,447	5,154,551	428,806	7.0	71.6	93.0	28.4
1901-1905	485,434	1,354,359	5,226,121	404,015	8.5	77.0	91.5	23.0
1906-1910	652,302	1,819,922	6,135,348	480,518	9.6	79.1	90.4	20.9
1911-1920	647,936	1,807,741	5,906,681	594,060	9.1	75.3	90.9	24.7

about 5800 kg., valued at 16 million marks, and of silver 47,000 kg., valued at 12 million marks.

The following centuries brought an extraordinary, if not uninterrupted, rise in the production of both precious metals. Gold production rose from 5800 kg. to 768,000 kg. in 1913, and silver production from 47,000 kg. to more than 7 million kg. in 1911.

The primary and most striking cause of this development was the discovery of new and rich deposits; but there was a secondary cause to be found in the very important factor of the progress made, especially in more recent times, in mining technique and in the working of ores: a progress which made it possible to continue the working of the poorer mines and to work also ores of relatively poor content. It even became possible to restart the working of mines which had previously been given up, and to work again residual ores which had already been treated.

In the following paragraphs the course of production of each of the two precious metals will be studied separately.

3. Gold Production from 1493 to Present Times

A glance down the columns of the table on the previous page shows, both in the case of the production of gold as well as in that of silver, the existence of definite periods distinguished from each other by the direction and pace of development.

1. *The Period from 1493 to 1680.*—Production of gold showed at first, up to the end of the seventeenth and the beginning of the eighteenth century, a gradual and almost uninterrupted increase. In Europe the gold mines of Salzburg stood from the middle of the fifteenth century to the middle of the sixteenth at the highest point of their productivity, whilst the production of gold in Transylvania and of the gold washings from German, Bohemian, and French rivers had by the end of the sixteenth century practically passed their highest point. While, however, the production from Salzburg altogether ceased from the middle of the sixteenth century, and while the European washings produced annually a few hundred thousand marks, the Transylvanian mines still continued throughout the sixteenth, seventeenth, and eighteenth centuries to produce fairly large quantities of gold. According to Soetbeer, the gold production of Austria-Hungary (as it existed until the end of the Great War) averaged, from 1500 to 1520, 2000 kg. per annum = 5.6 million gold marks, whilst the world production was a little more than 16 million gold marks. From 1545 to 1780, however, Soetbeer gives the Austro-Hungarian production of gold as only 1000 kg. = 2.8 million gold marks per annum.

As against this, however, Africa, and later the New World,

supplied an extremely rich substitute for the diminishing European production. According to Soetbeer, until the goldfields of New Granada and of Brazil came to be worked (seventeenth and eighteenth centuries) it was most probably Africa which supplied European trade with a steady and abundant flow of gold. The Portuguese brought in the sixteenth century not inconsiderable amounts of gold to Europe, and these probably came from south-eastern Africa. Guinea furnished the English with considerable quantities of gold in the second half of the seventeenth century. Soetbeer estimates the gold imported from Africa during the sixteenth century at more than 690 million, and during the seventeenth century at about 560 million gold marks. From Japan, too, by no means inconsiderable quantities of gold are supposed to have been brought to Europe in the second half of the sixteenth and in the seventeenth centuries by the Portuguese, and later by the Dutch.

The quantities of gold which in the first decades after the discovery of America were sent to Europe from the Antilles and from the border lands of the Mexican Gulf were probably overestimated. The gold washings of the Spaniards in the Antilles produced in the period 1500-1520 fairly substantial results in Hispaniola only. By 1515 the culminating point had already been reached. Lexis believes that taking the entire supply of gold from America between 1500 and 1520 at 15 million gold marks, one is probably giving a too high rather than a too low estimate. In the following decades the plundering of the treasures which had accumulated in Mexico and Peru, and the restarting of the workings in Mexico and in South America, produced amounts which for those days were of great importance to the gold supplies of Europe. More accurate examination has certainly shown that the earlier reports as to the gold production in those countries were very greatly exaggerated. Lexis estimates, basing himself in the main on Soetbeer, that between 1522 and 1547 the gold produced and plundered in Mexico amounted at most to 80 million gold marks—that is, to an annual average of 3·2 million gold marks. For the period 1548-1700 he estimates the average annual gold production of the Mexican mines to have been at most one million gold marks. For the eighteenth century he gives a gradual increase of annual production up to 4 million gold marks. The total gold supplies obtained by the Spaniards in Peru are estimated at about 20 million gold marks. Of this quantity about 16 million was represented by the famous ransom paid by Atahualpa, the last of the Incas. The supplies produced by the washing districts, which here and there were rich, in the area ruled over by the then Viceroy of Peru (that is, including Ecuador and Bolivia of to-day) are estimated for the period from 1534 to the end of

the sixteenth century at a figure of 210 million gold marks (that is, about 3·2 million gold marks annual average), and for the seventeenth century at 4·5 million gold marks (annual average). A few million gold marks per annum were also supplied from the middle of the sixteenth century by Chile.

Soetbeer regards New Granada as the most important gold-producing country from the second half of the sixteenth to the end of the seventeenth centuries. Already in the thirties of the sixteenth century the Spaniards found important quantities of gold in the possession of the natives. Soetbeer estimates that, by plunder and later by gold washings, they obtained gold of an annual average value of 5·58 million gold marks during the period 1537-1600, for the seventeenth century 9½ million gold marks, and for the first half of the eighteenth century nearly 14 million gold marks. Lexis considers these figures as overestimates. According to his data, the annual average production for the period 1536-1600 should be only 3·2 million gold marks, and for the eighteenth century 7·8 million gold marks.

According to the estimates of Soetbeer, during this first period the annual production of gold, as far as Europe was affected by it, rose altogether from 5800 kg., of a value of 16·2 million gold marks, at which figure it stood between 1493 and 1520, to 9260 kg., of the value of 25·8 million gold marks, in the twenty years from 1661 to 1680.

2. *Period 1681-1760.*—Towards the end of the seventeenth century the gradual increase in the gold production, which was to be observed from the time of the discovery of America, took a sudden and large swing upwards. The cause of this was the discovery and working of gold deposits in Brazil which were much richer than any previously discovered. Compared with this Brazilian production, the still considerable supplies from New Granada took a secondary place. This is clearly shown in the following table, in which Brazilian gold production is compared with the entire production of the world :—

Average.	Total Gold Production.	Brazilian Gold Production.	Production outside Brazil.
	mill. marks.	mill. marks	mill. marks.
1681-1700	30·0	4·2 ¹	25·8
1701-1720	35·8	7·7	28·1
1721-1740	53·2	24·9	28·3
1741-1760	68·7	40·7	28·0

¹ 1691-1700.

Whilst the general world-production was rising from 30 to 68·7 millions, the production outside Brazil remained practically stationary.

3. *Period 1761-1820.*—In the two decades from 1741-1760 gold production reached its maximum for the time being. From 1761 onwards the production in Brazil began, as the goldfields were getting exhausted, to decline as rapidly as it had increased from the end of the seventeenth century. Soetbeer gives for the Brazilian gold production the following figures (in annual averages) :—

1741-1760 .	.	.	40·9	million gold marks.
1761-1780 .	.	.	28·9	„ „ „
1781-1800 .	.	.	15·2	„ „ „
1801-1810 .	.	.	10·5	„ „ „
1811-1820 .	.	.	4·9	„ „ „

The other producing districts, of which New Granada again became the most important—its production amounted, according to Soetbeer, to nearly 14 million gold marks in the period from 1811 to 1820,—did not show any increases at all commensurate with and sufficient to compensate for the fall in the Brazilian production. On the contrary, the political events in Spanish America in the first decades of the century—the Wars of Independence of the republics of Central and South America which were being established on the ruins of the Spanish colonial empire—had an adverse influence on the production of gold in these important fields. Thus—to quote Soetbeer again—the supply of gold from Mexico fell from an annual average of 4·9 million gold marks in the decade 1801-1810 to 2·9 million gold marks in the succeeding decade. The gold production of Peru and Bolivia sank in the same period of time from 5 to 2·9 million gold marks per annum, and New Granada registered a reduction of 5·6 million gold marks in its annual average. In Europe and in the other producing areas the production of gold continued at a very low level. The result was that the total production, which had amounted to 68·7 million gold marks per annum during the twenty years between 1741 and 1760, fell to 31·9 million gold marks per annum during the decade 1811-1820.

4. *Period 1821-1847.*—From the twenties of the nineteenth century onwards gold production again moved upwards. The new rising tendency was at first slow, but became rapid towards the end of the forties. The movement was started by the tremendous progress made in the production of gold in Russia, in the Ural and later in Siberia. For as late a period even as the decade 1811-1820, Soetbeer still calculates the Russian annual supply at an annual average of no more than 900,000 gold marks.

The opening up of rich alluvial lands brought Russia in the following decade into first place amongst gold-producing countries. According to Russian official sources, the amounts of Russian and Siberian gold production averaged out as follows:—

1816-1820 . . .	277 kg. ¹	= 1·4 million gold marks.
1821-1830 . . .	3451 "	= 8·8 " " "
1831-1840 . . .	7090 "	= 18·0 " " "
1841-1845 . . .	17,936 "	= 45·0 " " "
1846-1850 . . .	26,518 "	= 67·6 " " "

Although the production in other lands, especially in Brazil, again gradually increased, the amounts involved in those cases represented only a few million gold marks, and their importance was becoming smaller and smaller in comparison with the tremendous increase of the Russian production.

It was due almost entirely to Russia that the production of gold in Europe rose from an annual average of 31·9 million gold marks in the decade 1811-1820 to a little more than 100 million gold marks, which was the annual average from 1841 to 1847.

5. *Period 1848-1870.*—The year 1848 inaugurates a new phase in gold production. This new phase stands in even greater contrast to the preceding periods than did the epoch which began with the discovery of America in contrast to preceding centuries.

In the year 1848 fields were discovered in California the wealth of which altogether eclipsed anything previously known. In the year 1851 similarly rich finds were made in Australia (Victoria and New South Wales). In the sixties there followed the discovery of goldfields and gold mines with rich deposits in a number of other States in the west of North America (Colorado, Dakota, Montana, Nevada). At the end of the fifties gold production was commenced in New Zealand, and at the end of the sixties in Queensland.

The United States alone furnished during 1851-1855 an average of 248 million gold marks per annum. It is true that the annual average of the succeeding years did not quite reach this level, but the average for the five years 1866-1870 still amounted to 212 million gold marks. The gold production of Australia reached its culminating point in the five years between 1856 and 1860 with an annual average of 230 million gold marks. In the five years 1866-1870 the annual production from this part of the world still amounted to as much as 196 million gold marks. At the same time, the production of Russia still kept up to the level which had been reached in the forties. Indeed, whilst the American and Australian outputs were already on the downward grade, the Russian production registered a new increase. In the

¹ The figures relate to gold of $\frac{1}{2}$ ths fineness.

five years 1866-1870 it showed, according to Soetbeer, an annual average of 84 million gold marks.

In the aggregate the production of the decade 1851-1860 averaged about 200,000 kg. per annum, valued at about 560 million gold marks, and the decade immediately following kept up with an annual average of 190,000 kg., valued at about 530 million gold marks, to practically the same level. The average production of these two decades was nearly eighteen times as great as had been that of the decade 1811-1820. The aggregate production of the two decades furnished very nearly as much gold as the preceding 250 years from 1600 to 1850 had done.

6. *Period 1871-1890.*—At the beginning of the seventies a temporary set-back occurred. As will be seen from the statistical table on page 98, the gold production of Australia, whose gold-bearing alluvial lands became for the most part exhausted, showed a particularly marked drop, which continued almost uninterruptedly up to the middle of the eighties. It reached its lowest point in 1886, when less than 40,000 kg. were produced, which contrasted with 824,000 kg. produced on an annual average during the five years from 1856 to 1860. A contraction of supplies of similarly high degree occurred in the Californian goldfields of the United States. In 1883 this production amounted to 45,000 kg., as against 88,000 kg. on an annual average taken over 1851-1855. Even the production of Russia, which had been increasing uninterruptedly to the end of the seventies, showed from 1880 onwards a by no means inconsiderable decrease. The other less important countries of production could not make up to any real extent the deficiency thus created. The world production of gold accordingly dropped from an annual average of 195,000 kg. for the period 1851-1870 to a figure of 148,600 kg. in the year 1883. This was the lowest point, but the years immediately following did not yet register any decided improvement. It seemed then as if all the richest gold deposits of the earth were steadily and uninterruptedly approaching exhaustion, and as if a period of definite reduction of gold supplies were approaching. Pessimistic prophecies on these lines were not lacking in those days.

7. *Period 1891 to the present day.*—In the second half of the eighties we note a fresh increase in gold production. It was at first halting and fitful. The fall in the Australian production ceased, the United States showed gradually increasing returns from their gold mines, and the continuing decrease in Russian production was more than compensated for by gold-mining operations which were beginning in South Africa.

The decided turn, however, only came at the beginning of the nineties. Year after year, and mostly in big leaps forward, the gold production increased. The amount by which it had fallen

back from the beginning of the seventies was quickly made good. At the end of the nineteenth century the annual output reached a figure which was nearly two and a half times as large as the average annual production during the Californian-Australian epoch. After a short pause, due to the Boer War, the annual production rose to more than 768,000 kg.—that is, to more than three and a half times the figure of the Californian period. Not until the Great War was there any noticeable retrogression. In 1920 the world's gold production stood at a figure of only about 504,000 kg.

The impetus to the last, and by far the greatest, upward movement in gold production was given by the mines of the Witwatersrand, in South Africa, the supplies from which doubled and trebled themselves in quick succession from 1891–1892 onwards. Here gold supplies of quite extraordinary dimensions were found. The gold could not be obtained by washings, but almost entirely by quartz quarrying, and yet the Transvaal furnished supplies which exceeded even the richest production of all previously worked alluvial lands. In the year 1898 the production of South Africa amounted to 120,600 kg., of a value of 335·4 million gold marks. Then the Boer War caused a cessation of mining for a short time, and after conclusion of peace the full resumption of mining appeared, quite apart from technical difficulties, to be adversely affected by shortage of labour. But already in 1904 as much as 129,000 kg. of gold, a figure in excess of that of 1898, was produced, and from that time onwards the production of South Africa went on increasing at such a rate that in the year 1916 it stood at 335,000 kg., which was about 70 per cent. higher than the average production of the whole world during the Californian era.

Beside the Transvaal a few other areas began to be worked. From 1888 onwards gold was produced in India, particularly in Mysore, in rapidly increasing quantities. In 1913 the gold production of British India amounted to about 51 million marks. In other Asiatic districts also, particularly in the Chinese area of Amur, substantial quantities of gold were found. The Chinese production of the years 1912–1914 is stated by the Director of the American Mint to have averaged 15·4 million gold marks.

In the second half of the nineties rich alluvial deposits were discovered in the far north-west of the North American continent, in the Canadian Klondyke and in the American Alaska. The climatic conditions of the far north certainly placed great difficulties in the way. Nevertheless, the Canadian production in the year 1900 was valued at more than 117 million gold marks. Since then, however, a set-back has also taken place here.¹

¹ This set-back proved to be temporary. Canadian production is again increasing. In 1925 the Canadian output was more than double the output in 1913.

The discovery and working of these new deposits would indeed have sufficed to bring to an end the period of standstill and retrogression in gold production. But these new deposits and mines could not of themselves have brought about so tremendous an increase of gold supplies as has been witnessed in the last three decades. The most recent epoch of gold production is in fact distinguished from previous periods of increase by the fact that the increases were not due solely to new deposits, but in a large part to substantial increases in the production of the old areas. The United States and Australia more than doubled their production from 1891 to 1900. From that time the rate of increase in the United States slackened, and in 1915 the highest point was reached with 152,000 kg. The following years brought a marked set-back. Rising wages rendered the working of gold mines so much less profitable that the gold production of 1920, with a figure of 77,000 kg., was only half of what it had been in 1915. Australia reached its maximum in 1903, with a figure of 134,000 kg. Since then its output has been steadily decreasing, and the lowest point was reached in 1920 with a supply of no more than 35,600 kg.

From the middle of the nineties onwards the production of both these areas almost kept pace step by step with the rapidly developing production of South Africa. When once the consequences of the Boer War had been overcome, South Africa outstripped the other producing countries. In 1915, the year of the maximum production, South Africa gave a figure of 327,000 kg. Next came the United States with 152,000 kg., and then Australia with 74,000 kg.¹ The fourth place was occupied by Russia, whose production also ceased falling from the end of the eighties and kept in the nineties at quite a respectable level. The annual production of Russia reached its highest point in the year 1910 with the figure of 54,000 kg. In the following year it fluctuated greatly and suffered a serious breakdown during the Great War. In 1922 it was estimated at no more than 2,177 kg.

It has already been pointed out, in the course of the general review of the production of the precious metals, that an unexpected rise in gold production in the older lands from which gold was obtained resulted in the main from technical progress in gold mining and in gold refining. These improvements in metallurgical methods made possible not only a more thorough exploitation of the already known gold deposits, but also the resumption of the working of mines which had been given up as unprofitable, and the reworking of remains which had already been worked, and it thus brought the level of production of the older producing countries

¹ [In 1922 the Canadian output surpassed that of Australia for the first time, the Dominion coming into third place among gold-producing countries of the world.]

to a height which had not before been reached, even during the period of the rapid exploitation of the rich alluvial lands. But they further furnished to a large extent the necessary conditions for a profitable working of the freshly discovered deposits. The gold production of the Transvaal would never have reached anything like its actual level without these technical developments. The mining on the Rand became profitable on the large scale in which it was carried out only when improvements in technical processes permitted the exploitation of quartz which contained only a few grams of gold per ton.

The most recent and most brilliant epoch of gold production is, therefore, distinguished from all previous epochs by being based on progress in metallurgical methods, rather than by being brought about by the discovery of fresh alluvial deposits which were easy to work. In the earlier periods of unusually large gold production most of the new supplies came from alluvial deposits—this was the case in ancient times, at the time of the Spanish conquests in America, and later at the time of the exploitation of the Brazilian, Californian, and Australian goldfields; nowadays by far the largest part of supplies is derived from mines. Gold-carrying alluvial deposits have practically in all countries, with the marked exception of Siberia, been entirely used up. This is particularly so in California and Australia, which once had the richest deposits. In California and the other gold-producing States of the Union we find nowadays the centre of gravity of gold production in quartz quarries. The same is the case with Australia. In South Africa, from the very beginning, no other gold came into consideration. Even in Siberia gold is not derived from surface deposits, but from the so-called diluvial strata which lie twenty feet or more under the surface of the earth. This is the same in Australia, as far as alluvial deposits play any part side by side with quartz quarries.

From a memorandum, prepared in 1894 for the German Silver Commission, by the mining expert Dr Hauchecorne, it appears that already at that time 70 per cent. of the aggregate gold production came from genuine mining and only 30 per cent. from the washing of alluvial deposits, whereas one and a half decades before that time the mines were a bad second to alluvial washings. Since then the ratio has gone considerably more in favour of mining.

This change is of particular importance, because mines can be exploited for much longer periods than surface deposits. While even the richest goldfields are, on account of the ease with which the gold is obtained, brought in a short time to a point of exhaustion, the decrease in the productivity of mines can only be gradual. Recent experiences have further shown that the belief held by many that the richness of the mines always decreases with the

depth is by no means of universal applicability. On the contrary, the deep working of the more important gold mines remains profitable for as long as the deposits last.

The more recent preponderance of the production of gold from mines has disproved the theory advanced, principally by the Viennese geologist Edward Suess, and widely held that, for geological reasons, the mining of gold had no future, and that, therefore, as soon as the alluvial deposits became exhausted an uninterrupted process of decrease in gold production would necessarily set in.¹ Suess's theory depended on the estimate that the largest part of gold supplies—which he put at no less than $\frac{1}{10}$ ths—is derived from alluvial deposits which contain an exceptional, but rapidly exhaustible, wealth of gold. As our knowledge of the earth's surface widens, the less likely becomes the discovery of new and rich alluvial deposits. The mining of gold would then not be a substitute, because of the uncertain and sparse distribution of gold in rock-formations. It followed, therefore, that gold production would gradually cease.

If ever a theory was effectively disposed of by events, this has been so with the theory of Suess. The known alluvial deposits are practically entirely exhausted, and yet the production of gold stands at a considerably higher level than before. Technical progress has overcome what seemed to be a law of nature. Lexis, as far back as two decades ago, quite rightly wrote as follows on this important question²:—

"If, according to Suess, $\frac{1}{10}$ ths of all gold was previously derived from washings, $\frac{1}{4}$ ths of the present supplies, other than the Siberian, are obtained from quartz quarries, and as it is now possible to work with advantage quartz which contains no more than $\frac{1}{4}$ of an ounce of gold per ton, and as, moreover, the gold contained in pyrites which cannot be extracted by ordinary processes can yet be more and more completely extracted by new methods, a considerable and permanent gold production is certain for many decades, probably even for centuries. . . . The present rate of increase in production can, of course, not continue long. It is also clear that the discovery of new rich deposits will in future be of rarer occurrence, whilst the old deposits will gradually become exhausted; but a real shortage of gold is a contingency so far removed from us in point of time that it is of as little importance in the consideration of present-day economic questions as is the possible exhaustion of the coal deposits of the earth."

For further details regarding gold production the reader is

¹ Cf. Edward Suess, *Zukunft des Goldes*, 1877.

² Art. "Gold und Goldwährung," in the *Handwörterbuch der Staatswissenschaften*, 2nd ed., vol. iv, p. 756.

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The Annual Gold Production of the World between 1876 and 1920

Year.	Soetbeer's Figures.		Figures of the Director of the American Mint.	
	Kg.	1000 Marks.	Kg.	1000 Marks.
1876	165,956	463,027	156,015	435,282
1877	179,445	500,660	171,442	478,323
1878	185,846	518,522	179,187	499,931
1879	167,307	466,797	163,667	456,631
1880	163,515	456,218	160,152	446,824
1881	160,678	449,000	155,020	432,506
1882	153,817	429,000	153,465	428,167
1883	148,584	415,000	143,543	400,485
1884	155,748	435,000	153,060	427,037
1885	155,972	435,000	163,169	455,242
1886	160,763	449,000	159,748	445,697
1887	158,247	441,000	159,157	444,048
1888	164,090	458,000	165,813	462,618
1889	176,272	492,000	185,812	518,415
1890	..	..	178,814	498,891
1891	..	..	196,574	548,441
1892	..	..	220,648	615,608
1893	..	..	236,978	661,169
1894	..	..	272,591	760,529
1895	..	..	299,060	834,377
1896	..	..	304,317	849,044
1897	..	..	355,212	991,041
1898	..	..	431,656	1,204,320
1899	..	..	461,515	1,287,627
1900	..	..	383,049	1,068,707
1901	..	..	392,705	1,095,649
1902	..	..	446,490	1,245,709
1903	..	..	493,083	1,375,701
1904	..	..	522,686	1,458,294
1905	..	..	572,204	1,596,448
1906	..	..	604,835	1,687,490
1907	..	..	621,375	1,733,636
1908	..	..	666,318	1,859,027
1909	..	..	683,201	1,906,131
1910	..	..	684,983	1,911,103
1911	..	..	695,062	1,939,223
1912	..	..	701,379	1,956,847
1913	..	..	768,256	2,143,434
1914	..	..	660,667	1,843,261
1915	..	..	707,897	1,975,033
1916	..	..	683,384	1,906,641
1917	..	..	631,090	1,760,741
1918	..	..	577,198	1,610,382
1919	..	..	550,388	1,535,582
1920	..	..	504,041	1,406,274

*The Gold Production in the most Important Producing Countries
from 1851 to 1920*

(Up to 1889 the figures are Soetbeer's, thereafter they are taken from the Director of the American Mint.)

Periods or Years (aver- ages).	U.S.A.		Australia.		Russia.		Africa.	
	Kg.	1000 Marks	Kg.	1000 Marks.	Kg.	1000 Marks.	Kg.	1000 Marks.
1851-1855	88,800	247,752	69,573	194,124	24,730	68,997	..	..
1856-1860	77,100	215,109	82,392	229,891	26,570	74,130	..	..
1861-1865	66,700	186,093	77,634	216,617	24,084	67,194	..	..
1866-1870	76,000	212,040	73,526	205,153	30,050	83,840	..	..
1871-1875	59,500	166,005	63,123	176,145	33,380	93,130	..	..
1876-1880	63,920	178,337	45,294	126,370	40,140	111,991	..	..
1881-1885	48,087	134,163	43,522	121,426	35,607	99,344	?	?
1886-1890	50,279	140,664	43,881	122,428	31,973	89,205	6,723	18,757
1891	49,917	139,268	47,245	131,814	36,356	101,433	23,687	66,087
1892	49,654	138,535	51,398	143,400	37,325	104,137	36,461	101,726
1893	54,100	150,939	53,698	149,817	39,805	111,056	44,096	123,028
1894	59,434	165,821	62,836	175,312	36,313	101,913	60,595	169,060
1895	70,132	195,668	67,406	188,063	43,476	121,298	67,040	187,042
1896	79,880	222,865	67,984	189,675	32,404	90,407	66,819	186,425
1897	86,312	240,810	79,244	221,091	34,977	97,586	88,111	245,830
1898	96,995	270,616	97,594	272,287	38,314	106,896	120,566	336,379
1899	106,911	298,282	119,352	332,992	33,354	93,058	109,876	306,554
1900	119,126	332,362	110,591	308,549	30,312	84,570	13,048	36,404
1901	118,367	330,244	115,679	322,744	34,383	95,929	13,677	38,159
1902	120,373	335,840	122,749	342,470	33,905	94,595	58,716	163,817
1903	110,731	308,939	134,231	374,504	37,063	103,406	102,314	285,456
1904	121,072	337,791	132,060	368,447	37,321	104,126	129,272	360,669
1905	132,682	370,183	129,291	360,722	33,542	93,582	170,410	475,443
1906	142,001	396,183	123,971	345,879	29,336	81,847	203,669	568,237
1907	136,075	379,649	113,870	317,697	40,151	112,021	228,685	638,031
1908	142,281	396,964	110,333	307,829	42,209	117,763	250,558	599,057
1909	149,975	418,430	106,843	298,092	48,723	135,937	257,280	717,811
1910	144,853	404,140	98,511	274,846	53,535	149,363	263,602	735,450
1911	145,787	406,746	90,557	252,654	48,377	134,972	288,201	804,080
1912	140,613	392,310	82,018	228,830	33,402	93,192	316,764	889,352
1913	133,741	373,137	79,823	222,706	39,885	111,279	311,808	869,914
1914	142,239	396,847	71,575	199,694	43,013	120,006	303,938	847,987
1915	152,025	424,150	74,326	207,370	43,638	121,751	327,475	913,655
1916	139,318	388,697	60,903	169,919	33,854	94,453	335,464	935,945
1917	126,017	351,587	51,758	144,405	27,084	75,564	322,457	899,655
1918	103,290	288,179	46,362	129,350	18,056	50,376	296,493	827,215
1919	90,782	253,282	40,492	112,973	16,551	46,177	291,749	813,980
1920	77,019	214,884	35,582	99,274	2,177	6,074	282,716	788,775

referred to the comprehensive works of Soetbeer, Lexis, and to numerous monographs, as well as to the annual reports of the Director of the American Mint. We must content ourselves here with giving (on pp. 97 and 98), by way of elucidation of what has already been said, two statistical tables—the one showing the production of gold in the several years from 1876 onwards, and the other giving for about the last seventy years figures of production in the most important gold-producing countries.

¶ 4. Production of Silver from 1493 to the Present Day

The production of silver has not developed on lines in any way parallel with the lines of development of gold production. But one thing both lines of development have in common—the extraordinary rise in production, which shows particular acceleration from the middle of the nineteenth century. The causes of this common tendency are the same. They are of a general nature and result from our wider geographical and geological knowledge of the crust of the earth and from the progress made in the science of metallurgy.

As in the case of gold, a number of different periods may be distinguished in the production of silver.

1. *Period 1493–1620.*—The first 120 years following the discovery of America brought an even more extraordinary increase in silver production than in the case of gold. In the last years of the fifteenth century and in the first three decades of the sixteenth the marked increase was due exclusively to European and particularly to German and Austrian mining. The supplies of silver which came from the New World before 1533 were of little importance. In Germany, until about the middle of the sixteenth century, the Erzgebirge (ore mountains) of Saxony in particular gave substantial and increasing results. The average silver production in Saxony is estimated by Soetbeer at 12,860 pounds weight (=1,157,400 silver marks) for the period from 1493 to 1520, and at 26,300 pounds weight (=2,367,000 silver marks) for the years from 1545 to 1560. He estimates the average production of Germany in the two periods to have been 1,980,000 and 3,492,000 marks. Rich supplies came from Bohemia, especially in the thirties of the sixteenth century. The Joachimsthal mines were then at the highest point of their development. The mines in the Tyrol furnished, as early as 1470, supplies which for those days were uncommonly large. Soetbeer estimates the entire production in 1521–1544 of the area which later became Austria-Hungary at an annual average of 32,000 kg.=5,760,000 silver marks. During this period, although supplies had already begun from America, nearly two-thirds of the aggregate supplies

came from Europe. Of the total production of 90,200 kg., the Austro-Hungarian share was 32,000 kg., the German 15,000, and for the whole of Europe 59,000 kg. It was only from about 1570 that any marked symptoms of diminution are shown in German and Austrian supplies.

Although the European production of silver was still rising, we find, from 1545 onwards, America taking the lead in the world's production of silver. Before this date certain quantities had been obtained by plunder in Mexico and Peru, and by the commencement of working of the Peruvian silver mines. The decisive event, however, was the discovery in 1545 of the silver mines of Potosi in Bolivia, followed by the opening up three years later (1548) of the rich silver mines of Zacatecas in Mexico. A technical improvement of great importance, the introduction of the amalgam process (in Mexico in 1558 and in Peru in 1571), contributed substantially to the rise in the production of silver, especially after the discovery of mercury mines in the vicinity of the silver mines at Potosi.

The supplies from Potosi were, especially between 1545 and 1555 and again from 1571 to 1600, particularly great. They constituted more than half of the world's production of the day. Peru and Mexico were left far behind. European production—although it did not absolutely diminish until the last three decades of the sixteenth century—now accounted for but a small fraction of the world's aggregate.

The truth of the above general conclusions may be regarded as established, although the various estimates differ in detail. Lexis gives for the production of Potosi, Peru, and Mexico figures which are throughout lower than those of Soetbeer. According to his calculations the production, for instance, of Potosi, from 1545 to 1600, amounted to 8,840,000 kg., whereas Soetbeer calculates it at 11,053,000 kg.

According to Soetbeer, the distribution of the average silver production from 1493 to 1620 amongst the several producing areas was as follows (the estimates by Lexis of the aggregate production are given in parentheses):—

Years.	Europe. Kg.	Peru. Kg.	Potosi. Kg.	Mexico. Kg.	Total Production.	
					Kg.	1000 Marks. ¹
1493-1520	47,000	..	..	..	47,000	8,460 (8,250)
1521-1544	59,000	27,300	..	3,400	90,200	16,236 (12,300)
1545-1560	62,000	48,000	183,200	15,000	311,600	56,088 (46,250)
1561-1580	48,500	46,000	151,800	50,200	299,500	52,910 (46,000)
1581-1600	41,300	46,000	254,300	74,300	418,900	75,402 (61,000)
1601-1621	27,400	103,400	205,900	81,200	422,900	76,122 (58,000)

¹ Silver mark = $\frac{1}{180}$ kg. of silver.

During this first period the production of silver increased seven to eightfold, taking the smaller estimates of Lexis, and ninefold if we take Soetbeer's figures.

On the other hand, the production of gold, though it also shows a rise in that period, did not increase by even half this ratio. Gold constituted in the period 1493-1520 11 per cent. by weight of the joint production of the two precious metals, but this percentage fell to 2 per cent. in the first two decades of the seventeenth century.

2. *Period 1621-1680.*—Whilst gold production in the seventeenth century after a temporary standstill in the twenties and thirties went forward at an accelerated pace, in the case of silver the enormous acceleration of the sixteenth century was followed by a period of retardation. The set-back was due to the declining output of the mines of Potosi, the production from which fell, according to Soetbeer's estimates, from an average of 254,300 kg. in 1581-1660 to one of only 100,500 kg. in the period 1661-1680. This substantial reduction was, however, largely counter-balanced by the relatively high Peruvian production (estimated by Soetbeer to have given for the seventeenth century an annual average of 103,400 kg.), resulting from the opening up of the silver mines, and the gradual rise in the production of Mexico, which, with an annual average of 102,000 kg. for the years 1661-1681, exceeded for the first time the contemporary Potosi production. On the whole, as compared with the period from 1601 to 1620, the production in 1661-1681, registered a set-back. Soetbeer estimates it to have decreased from 422,900 kg. = 76,122,000 silver marks to 337,000 kg. = 60,660,000 silver marks. According to Lexis, the silver production dropped from 61 to 51 million silver marks between the periods 1581-1600 and 1661-1680.

3. *Period 1681-1810.*—In the last two decades of the seventeenth century the production began again slowly to rise. From the beginning of the eighteenth century it increased so rapidly that by the beginning of the nineteenth it had more than doubled.

The several areas of production participated in varying degrees in these developments. The production of Potosi at first went on diminishing, and its annual average reached in the period 1721-1740 its lowest point with (according to Soetbeer) a figure of 43,800 kg. The decades which followed, however, brought a fresh rise, and by the time the eighteenth century was passing into the nineteenth the supplies yielded by Potosi amounted again to nearly 100,000 kg. The production of Peru remained stable up to the latter half of the eighteenth century, but from about 1760 to the first decade of the nineteenth century

it showed an increase by about one-half. In the European production a new upward tendency also appeared at the end of the seventeenth century. To these sources of supply Siberia was added as from the middle of the eighteenth century. The mines of Siberia furnished towards the end of the eighteenth century about 20,000 kg. per annum. All this, however, sinks into insignificance in the light of the Mexican increases, which dominate the whole of this period. The Mexican production increased from about 110,000 kg. at the beginning of the seventeenth century to 550,000 kg. at the beginning of the nineteenth. Altogether, the annual average rose between 1661-1680 and 1801-1810 from 337,000 kg. to 894,000 kg. (Soetbeer). The increase in the production of silver did indeed, at first, lag far behind the simultaneous increase in gold production (Brazil), so that gold, which had constituted in 1601-1620 only 2 per cent. by weight of the gold and silver production taken jointly, came to be 4.4 per cent. in 1741-1760; but whilst the production of gold entered in 1760 on a downward slope, that of silver continued without interruption to mount at a tremendous rate right up to the first decade of the nineteenth century.

4. *Period 1811-1830.*—This period witnessed an uncommonly low state of production of the precious metals. Whilst gold production at first continued to fall, and from 1820 began again to rise slowly, the production of silver began suddenly to fall at a rapid rate. In the course of two decades it was about halved. From 894,000 kg., which was its annual average in 1801-1810, it dropped to 460,000 kg. for the decade 1821-1830. The cause lay principally in the political conditions which existed in the large American fields of production, conditions which have already been referred to in connection with production of gold. It had not been possible to keep intact the well-ordered mining organisation in Mexico and in South America during the Wars of Independence and subsequent internal disturbances.

In connection with the figures shown above on p. 100, we give on the following page a statistical table which summarises the developments in silver production and its distribution by areas for the period 1621-1850.

5. *Period from 1831 to the present day.*—In the thirties of the nineteenth century silver production took a new turn. Production in what had been Spanish America again assumed larger proportions after the Wars of Independence, especially in Mexico, where towards the end of the sixties the previous maximum was reached and, in the course of the succeeding decades, left far behind. To the old American sources of supply Chile was added in the thirties. It began to furnish large and rapidly increasing quantities of silver. In the sixties we find the opening up of a

new area which had produced no silver at all before the middle of the nineteenth century, but now began with a rate of development so rapid as to bring it soon into the first place amongst silver-producing countries. This area was that of the United States of America. Its annual output of silver averaged in the fifties not much more than 7000 kg. The discovery of silver mines richer even than those of Potosi led to the rapid rise in production. It amounted already in the first half of the sixties to an

Average.	Europe. Kg.	Peru. Kg.	Bolivia (Potosi). Kg.	Mexico. Kg.	Siberia. Kg.	Total Production.	
						Kg.	1000 Marks.
1621-40	27,000	103,400	172,000	88,200	..	393,600	70,848(57,500) ¹
1641-60	25,500	103,400	139,200	95,200	..	366,300	65,934(51,500)
1661-80	27,000	103,400	100,500	102,100	..	337,000	60,660(51,000)
1681-1700	30,400	103,400	92,900	110,200	..	341,900	61,542(52,250)
1701-20	33,300	103,400	49,100	163,800	..	355,600	64,008(63,000)
1721-40	46,200	103,400	43,800	230,800	..	431,200	77,616(71,000)
1741-60	55,100	103,400	58,200	301,000	7,945	533,145	95,966(94,000)
1761-80	53,100	121,600	83,000	366,400	20,140	652,740	117,493(116,000)
1781-1800	58,900	128,400	98,000	562,400	20,360	879,060	158,231(157,000)
1801-10	59,400	151,300	96,500	553,800	20,150	894,150	160,947(160,000)
1811-20	57,700	88,000	49,300	312,000	22,770	540,770	97,339(97,000)
1821-30	60,200	58,000	42,300	264,800	23,260	460,560	82,901(82,000)
1831-40	65,840	90,000	61,000	331,000	20,610	596,450	107,606(107,000)
1841-50	101,600	108,000	66,000	420,300	19,515	780,414	140,475(140,000)

average of 174,000 kg., and in the second half of the seventies it reached nearly a million kg. and surpassed the output of all other lands. Up to the second half of the nineties the United States occupied an unchallenged place. In the succeeding years, however, Mexico caught up and passed the North American output. The Director of the American Mint gives the Mexican silver output for 1911 as 2,458,000 kg. and the United States output as 1,879,000 kg. The year 1914 brought a sudden and sharp set-back in the Mexican production, which fell to 857,000 kg. Since then it has again increased to more than 2 million kg. in 1920.

In the middle of the eighties Australia was added to the circle of silver-producing areas, and already by 1893-94 the Australian mines gave an output of more than 100,000 kg. The Director of the American Mint records the Australian production for 1910

¹ The figures in parentheses are estimates by Lexis.

World's Annual Production of Silver from 1876 to 1920

Year.	According to Soetbeer.		According to Report of the Director of the American Mint.	
	Kg.	1000 Marks.	Kg.	1000 Marks.
1876	2,323,779	364,833	2,107,355	329,000
1877	2,388,612	386,955	1,949,567	316,000
1878	2,551,364	395,461	2,282,530	355,000
1879	2,507,507	381,141	2,313,572	351,000
1880	2,479,998	381,920	2,326,386	360,000
1881	2,586,700	395,800	2,457,830	378,000
1882	2,773,100	418,100	2,689,582	413,000
1883	2,775,100	416,400	2,773,655	416,000
1884	2,910,300	436,500	2,537,050	381,000
1885	3,036,000	436,800	2,849,392	410,000
1886	3,021,200	405,700	2,901,863	390,000
1887	3,324,600	438,800	2,989,793	395,000
1888	3,673,300	477,200	3,384,932	429,000
1889	4,237,000	534,900	3,739,076	472,000
1890	..	..	3,921,996	554,000
1891	..	..	4,266,498	569,000
1892	..	..	4,763,563	560,000
1893	..	..	5,146,789	542,000
1894	..	..	5,119,947	439,000
1895	..	..	5,209,867	460,000
1896	..	..	4,885,158	445,000
1897	..	..	4,989,657	404,000
1898	..	..	5,258,210	419,000
1899	..	..	5,240,429	424,000
1900	..	..	5,399,299	452,000
1901	..	..	5,382,369	436,000
1902	..	..	5,063,566	362,000
1903	..	..	5,216,800	380,000
1904	..	..	5,108,067	400,000
1905	..	..	5,359,803	441,000
1906	..	..	5,133,887	469,000
1907	..	..	5,729,611	511,000
1908	..	..	6,318,237	456,000
1909	..	..	6,598,721	464,000
1910	..	..	6,896,282	503,000
1911	..	..	7,035,548	513,000
1912	..	..	6,977,002	579,000
1913	..	..	6,964,361	568,000
1914	..	..	4,996,141	373,151
1915	..	..	5,591,101	391,766
1916	..	..	5,013,310	464,704
1917	..	..	5,417,972	654,855
1918	..	..	6,163,870	819,373
1919	..	..	5,488,634	830,711
1920	..	..	5,418,742	745,888

*Silver Output of the most important Producing Areas,
1851-1920*

(1851-1885 based on Soetbeer ; 1896-1920 based on Director
of the American Mint.)

Periods (annual averages.)	U.S.A. Kg.	Mexico. Kg.	Peru, Bolivia, Chile. Kg.	Australia. Kg.	Ger- many. ¹ Kg.
1851-1855	8,300	466,100	218,600	..	48,860
1856-1860	6,200	477,800	190,400	..	61,510
1861-1865	174,000	473,000	191,100	..	68,320
1866-1870	301,000	520,900	229,800	..	89,125
1871-1875	564,800	601,800	374,700	..	143,080
1876-1880	980,700	655,800	350,000	..	163,800
1881-1885	1,137,600	750,800	365,000	?	238,920
1886	1,227,000	794,000	547,000	29,403	318,880
1887	1,284,000	904,000	412,247	6,422	366,960
1888	1,424,000	995,000	491,000	120,308	405,910
1889	1,555,000	1,144,000	456,000	204,523	402,400
1890	1,696,000	1,212,000	440,603	258,212	402,257
1891	1,815,000	1,084,000	476,404	311,100	443,840
1892	1,976,000	1,229,000	493,000	418,087	488,000
1893	1,867,000	1,380,000	873,793	637,800	448,100
1894	1,540,000	1,463,000	880,000	562,263	442,800
1895	1,733,662	1,461,008	939,361	389,102	392,000
1896	1,830,347	1,422,315	418,672	380,746	428,400
1897	1,675,582	1,676,925	437,878	369,523	448,100
1898	1,693,563	1,765,116	655,054	326,379	480,600
1899	1,703,720	1,730,089	669,858	396,266	467,600
1900	1,693,395	1,786,887	697,771	415,014	415,700
1901	1,717,705	1,793,692	803,092	318,256	403,800
1902	1,726,603	1,872,091	465,759	249,690	430,600
1903	1,689,270	2,193,249	270,592	301,233	396,300
1904	1,794,509	1,891,764	237,356	452,926	389,800
1905	1,744,995	2,023,044	300,184	467,666	399,800
1906	1,757,944	1,717,738	328,262	432,640	393,400
1907	1,757,844	1,901,934	459,983	558,292	386,900
1908	1,631,129	2,291,260	478,141	534,218	407,200
1909	1,702,068	2,299,920	470,117	508,842	400,600
1910	1,777,229	2,219,975	407,996	670,165	420,000
1911	1,878,675	2,458,241	401,449	515,658	439,600
1912	1,983,415	2,321,626	385,737	458,412	895,800
1913	2,077,807	2,199,186	385,755	563,873	765,800
1914	2,253,657	856,820	311,163	111,136	651,100
1915	2,331,604	1,230,798	413,375	133,616	349,400
1916	2,314,613	710,370	472,447	126,386	319,000
1917	2,231,428	1,088,647	467,060	311,042	276,100
1918	2,109,179	1,944,541	439,089	309,000	280,300
1919	1,763,062	2,049,898	440,334	223,573	294,300
1920	1,721,977	2,073,476	410,459	232,307	..

¹ Official German statistics.

at 670,000 kg., which brought this British Dominion to the third place among silver-producing countries. Here, too, the year 1914 brought a sudden collapse of production. From a figure of 564,000 kg. in 1913 the output fell to 111,000 kg. in 1914, then rose again to 232,000 kg. in 1920.

In Europe, too, the production of silver rose to a not inconsiderable extent. In Germany, in particular, output developed from the beginning of the forties, and especially from the early sixties onwards, to such an extent that up to the beginning of the twentieth century Germany ranked third among silver-producing countries. It should, however, be noted that a large part of the silver produced in Germany is extracted from imported ores. Latterly, the German production (including that from imported ores) has been exceeded by that of Australia and also of Canada. Other European countries, especially Spain, have again taken up silver mining with success.

The general result was that by the second half of the fifties the production of silver had made up the loss from the beginning of the century, and in the five years 1856-1860 the annual output averaged more than 900,000 kg. From the early seventies up to the middle of the nineties there then ensued so tremendous a boom that the annual production leapt forward from $1\frac{1}{2}$ to more than 5 million kg. From that time onwards we find the annual output at varying figures above 5 million kg., exceeding 6 million kg. for the first time in 1908, and reaching 7 million kg. in 1911. At the time of writing it aggregates 5 to 6 million kg. per annum.¹

Improvements in metallurgical technique have contributed even more than in the recent rises in gold production to these brilliant developments in the production of silver. The substantial decreases in costs of production which they brought about have made the working up of inferior ores more and more profitable, notwithstanding—and this must be emphasised—the drop by more than one-half which has taken place in the price of silver from the beginning of the seventies, and as ores with a small silver content are extensively found, the sole practical limit to expansion in silver production is set by the price which can be obtained for the metal.

As was done above in the case of gold, we give on pp. 104 and 105 a few special data relating to the production of silver in individual years from 1876 onwards, and to the output of individual countries from 1851 onwards.

¹ Early in 1923.

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World's Production of the Precious Metals in the Year 1920 by Countries

(Based on "The Report of the Director of the Mint on the Production of the Precious Metals in the calendar year 1920," Washington, 1921.)

Country.	Gold.		Silver.	
	Kg. Standard.	Value in 1000 Marks.	Kg. Standard.	Value in 1000 Marks.
England . . .	..	..	1,555	214
France . . .	227	633	373	51
Austria . . .	..	..	435	60
Czecho-Slovakia . . .	273	762	21,153	2,912
Russia . . .	2,177	6,074	1,555	214
Greece . . .	6	17	4,666	642
Italy . . .	23	64	10,887	1,499
Serbia . . .	..	..	467	65
Norway . . .	..	..	10,784	1,484
Sweden . . .	15	42	933	128
Spain . . .	..	..	99,265	13,664
Turkey . . .	..	..	3,110	428
Europe . . .	2,721	7,592	155,183	21,361
U.S.A. . . .	77,019	214,884	1,721,977	237,029
Canada . . .	23,854	66,553	397,932	54,775
Mexico . . .	22,969	64,084	2,073,476	285,413
Central America . . .	4,514	12,594	83,981	11,560
Argentine . . .	5	14	622	86
Bolivia, Chile . . .	1,060	2,957	124,416	17,126
Brazil . . .	2,708	7,555	622	86
Ecuador . . .	1,129	3,150	1,089	150
Guiana . . .	2,080	5,803	249	34
Colombia . . .	8,727	24,348	14,930	2,055
Peru . . .	1,952	5,446	286,043	39,374
Uruguay . . .	12	33	..	..
Venezuela . . .	752	2,098	124	17
America . . .	146,781	409,519	4,705,641	647,705
Africa . . .	282,715	788,775	38,479	5,297
Australia . . .	35,582	99,274	232,307	31,977
China . . .	4,514	12,594	2,177	300
Japan . . .	8,303	23,165	162,126	22,316
British India . . .	13,584	37,899	89,288	12,290
Remainder of Asia . . .	9,841	27,456	33,721	4,642
	36,242	101,114	287,312	39,548
Total . . .	504,041	1,406,274	5,418,742	745,888

¶ 5. The Ratio between the Values of Gold and Silver

Of no less importance than the development of production of the two precious metals is the movement, from time to time, of the ratio between their values.

A knowledge of how this ratio has varied is as important to a correct understanding of the development of international currency conditions as a knowledge of the changes which the production of the precious metals has undergone. Of course, there is a difference in the contribution by production on the one hand, and by variability in the ratio of value on the other, to the shaping of the universal currency organisation. The production of the metals is chiefly dependent upon factors which have nothing to do with the course taken by monetary conditions. It is dependent upon the discovery of new deposits and upon technical progress. The relation between the values of gold and silver, on the other hand, is, quite apart from the effects of changes in production, largely influenced by changes in monetary conditions. As has been seen from the historical outline of international currency systems, a complicated relation exists between the production of the two metals, their employment for money purposes and the ratio between their values. The most interesting and most important problems in the evolution of general currency conditions from the discovery of America to the outbreak of the Great War are to be found in this sphere.

Thus, while a survey of the development of the ratio of value is necessary to a study of the shaping of international currency conditions, the causes underlying changes in this ratio can only be properly elucidated in the light of developments in the currency systems. Accordingly, only the manner in which the ratio between the values of gold and silver has actually varied can be considered at this stage, and the investigation of the causes must for the present be deferred.

A short review of the fluctuations in the ratios of values from early days to modern times has already been given. We give below, by way of supplement to the data already given, a statistical table showing the variation in the ratio of values for the same periods as the variations in production of precious metals. In this connection also the thorough researches of Soetbeer have in the main been used. Soetbeer, for the period before 1687, based himself upon information obtainable from currency legislation, account books, and other material. For the period after 1687 he found reliable material in the regular quotations of gold and silver prices on the Hamburg exchange. For very recent times the calculation of the ratio is based mostly on the price of silver quoted in London.

The Ratio of Value between Gold and Silver

(Averages for periods from 1501 to 1921.)

Periods.	No. of Kg. of Silver equal to 1 Kg. of Gold.	Periods.	No. of Kg. of Silver equal to 1 Kg. of Gold.
1501-1520	10.75	1851-1855	15.41
1521-1540	11.25	1856-1860	15.30
1541-1560	11.30	1861-1865	15.40
1561-1580	11.50	1866-1870	15.55
1581-1600	11.80	1871-1875	15.97
1601-1620	12.25	1876-1880	17.81
1621-1640	14.00	1881-1885	18.63
1641-1660	14.50	1886-1890	21.16
1661-1680	15.00	1891-1895	26.32
1681-1700	15.00	1896-1900	33.54
1701-1720	15.21	1901-1905	36.20
1721-1740	15.08	1906-1910	35.68
1741-1760	14.75	1911-1915	36.67
1761-1780	14.72	1916	30.11
1781-1800	15.09	1917	23.09
1801-1810	15.61	1918	21.00
1811-1820-	15.51	1919	18.44
1821-1830	15.80	1920	20.27
1831-1840	15.75	1921	32.20
1841-1850	15.83		

As far as the reliability of the ratio for the earlier periods is concerned, similar remarks apply as in the case of the figures of metallic production. Soetbeer himself asserts that, notwithstanding every care and foresight in selecting and using the material at his disposal, his results must be regarded as only approximate estimates, amongst other things because the imperfect means of communication in those days resulted in the quotations of the two metals, at different places, and in one and the same place, at different times, being liable to very rapid fluctuations.

In more recent times local fluctuations in the ratio of value have been reduced to a minimum. In addition to the London quotations, those on the New York, Hamburg, and Paris exchanges are useful in regard to the investigation of individual points.

A review of the general development of the ratio of value between gold and silver shows that from the beginning of the

sixteenth century silver fell considerably, and almost without interruption, in relation to gold. An exception worth mentioning is provided by the periods 1720-1780 and 1850-1865 in which the value of silver in relation to the value of gold rose slightly but only temporarily. Mention must also be made of the years of the Great War. These brought about in the price of silver a strong and sudden recovery, which has to a large extent already been lost.

The rapidity of the drop in the gold value of silver differed, however, in the several periods. During the whole of the sixteenth century and in the first two decades of the seventeenth century the value of silver was falling slowly but steadily. The period 1601-1620 gave an average ratio of value of 1 : 12.25 as compared with 1 : 10.75 in the previous century. This corresponds to a depreciation of silver of about 12 per cent. within a hundred years. It should be mentioned here that in those days silver production underwent an extraordinary development, whereas gold production grew comparatively slowly.

The following decades brought considerable acceleration in the rate of depreciation of silver. The ratio for the period 1621-1640 had already fallen to 1 : 14, and it fell further to 1 : 15 in the forty years from 1661 to 1700, and to 1 : 15.21 during the period 1701-1720. How little production, unaided by other factors, is capable of giving a decisive turn to the ratio of value of the two metals is seen with special clearness from this period, during which silver depreciated by nearly 20 per cent. whilst its production was falling off slowly and whilst the production of gold was rising. The share of gold by weight in the joint production of the two metals rose at this time from 2 per cent. to $3\frac{1}{2}$ per cent.

From 1720 onwards the value of silver again began to rise a little. During the period 1761-1780 the average relation was 1 : 14.72. In this first period of interruption in the fall in the value of silver, gold production registered, after the discovery of America, a considerable increase, which caused—notwithstanding the simultaneous increase in the production of silver—a temporary rise to 4.4 per cent. of the share of gold by weight in the joint production of the two metals during the period 1741-1760.

With the falling off in the production of gold, whilst the output of silver was still for the time being increasing, the value of silver began to sink again towards the end of the eighteenth century. The ratio of value kept on the whole during the first half of the nineteenth century to within 1 : 15.5 and 1 : 16, with a clearly marked tendency, particularly towards the end of this period, to a further reduction in the value of silver.

A new phase was inaugurated by the discovery of the Cali-

fornian goldfields. The ratio shifted in favour of silver and to the disadvantage of gold. The average ratio for the five years 1856-1860 was 1:15.3, and in 1859 this ratio went for a time to 1:15.03 on the London market, after being in 1848 for a time at 1:16.12. The share by weight of gold, in the joint production of the two metals, rose in the fifty years to more than 18 per cent.

In the second half of the sixties, however, a new change was already setting in, and in the seventies the rapid and uninterrupted collapse of the price of silver began. In two decades the white metal lost about half its value. In the year 1909, 50 kg. of silver were worth only as much as 1 kg. of gold.

The period of this remarkable development, the causes of which were the subject of embittered controversy in the fight between the protagonists of monometallism and bimetallism, is characterised by the following features:—

1. As far as production is concerned, until the middle of the eighties the output of gold was falling off, whilst the production of silver was rising in a marked degree. In the years that followed the rate of production of gold increased, but that of silver greatly outdistanced it until about 1893, with the result that the share by weight assigned to gold in the joint production of the two metals fell again during the period 1886-1895 to an average of 4.8 per cent. From 1894 onwards there was a substantial recovery in the rate of production of gold, which did not, however, bring with it any permanent recovery in the price of silver.

2. As far as monetary conditions were concerned, the early seventies brought changes of very great importance in the currency systems of the civilised world. Practically all countries to be considered in international commerce demonetised silver and introduced the gold standard more or less completely. The employment of silver for money purposes was restricted, while the use of gold currency was greatly extended.

These remarks must suffice for the present in order to show the relation between the history of changes in the ratio and that of the general lines of development.

As throwing light upon the important events since the middle of the nineteenth century, we give in the statistical table on pages 112 and 113 the London quotation of the prices of silver from 1840 to 1921, and the resulting average ratios of value between gold and silver for those years. The following explanation must be added:—

The London silver quotations are in pence (d.) per standard ounce of silver (oz. st.). Standard silver contains $\frac{3}{16}$ ths of pure silver. From an ounce of standard gold of $\frac{1}{12}$ ths fineness £3, 17s. 10½d. = 934.5d. are coined. If a = the London quotation of the price of silver, then we have the following chain for

London Silver Prices and the resulting Ratios between the Values of Silver and Gold, 1848-1921

Year.	Lowest.	Highest.	Average.	Average Ratio of Value. 1 kg. Gold = x kg. Silver.
	Price of Silver (Pence per ounce standard).			
1848	58 $\frac{1}{8}$	60	59 $\frac{1}{2}$	15·85
1849	59 $\frac{1}{2}$	60	59 $\frac{3}{4}$	15·76
1850	59 $\frac{1}{2}$	61 $\frac{1}{8}$	61 $\frac{1}{16}$	15·44
1851	60	61 $\frac{5}{8}$	61	15·46
1852	59 $\frac{7}{8}$	61 $\frac{7}{8}$	60 $\frac{1}{2}$	15·58
1853	60 $\frac{5}{8}$	61 $\frac{7}{8}$	61 $\frac{1}{2}$	15·33
1854	60 $\frac{7}{8}$	61 $\frac{7}{8}$	61 $\frac{1}{2}$	15·33
1855	60	61 $\frac{5}{8}$	61 $\frac{5}{16}$	15·38
1856	60 $\frac{1}{2}$	62 $\frac{1}{2}$	61 $\frac{5}{16}$	15·38
1857	61	62 $\frac{3}{8}$	61 $\frac{3}{4}$	15·27
1858	60 $\frac{3}{4}$	61 $\frac{7}{8}$	61 $\frac{5}{16}$	15·38
1859	61 $\frac{3}{4}$	62 $\frac{3}{4}$	62 $\frac{1}{16}$	15·19
1860	61 $\frac{1}{4}$	62 $\frac{3}{8}$	61 $\frac{1}{8}$	15·29
1861	60 $\frac{1}{8}$	61 $\frac{3}{8}$	60 $\frac{1}{16}$	15·51
1862	61	62 $\frac{1}{8}$	61 $\frac{7}{16}$	15·34
1863	61	61 $\frac{3}{4}$	61 $\frac{3}{8}$	15·36
1864	60 $\frac{5}{8}$	62 $\frac{3}{4}$	61 $\frac{3}{8}$	15·36
1865	60 $\frac{1}{2}$	61 $\frac{5}{8}$	61 $\frac{1}{16}$	15·44
1866	60 $\frac{3}{8}$	62 $\frac{1}{2}$	61 $\frac{1}{8}$	15·41
1867	60 $\frac{3}{8}$	61 $\frac{1}{4}$	60 $\frac{9}{16}$	15·57
1868	60 $\frac{1}{8}$	61 $\frac{1}{8}$	60 $\frac{1}{16}$	15·58
1869	60	61	60 $\frac{7}{16}$	15·59
1870	60 $\frac{1}{4}$	60 $\frac{3}{4}$	60 $\frac{9}{16}$	15·57
1871	60 $\frac{3}{16}$	61	60 $\frac{1}{2}$	15·58
1872	59 $\frac{1}{4}$	61 $\frac{1}{8}$	60 $\frac{5}{16}$	15·63
1873	57 $\frac{7}{8}$	59 $\frac{1}{16}$	59 $\frac{1}{16}$	15·93
1874	57 $\frac{1}{4}$	59 $\frac{1}{2}$	58 $\frac{5}{16}$	16·16
1875	55 $\frac{3}{4}$	57 $\frac{5}{8}$	56 $\frac{3}{8}$	16·64
1876	46 $\frac{3}{4}$	58 $\frac{1}{2}$	52 $\frac{3}{4}$	17·75
1877	53 $\frac{1}{4}$	58 $\frac{1}{4}$	54 $\frac{1}{16}$	17·20
1878	49 $\frac{1}{2}$	55 $\frac{1}{4}$	52 $\frac{9}{16}$	17·92
1879	48 $\frac{3}{8}$	53 $\frac{3}{4}$	51 $\frac{1}{4}$	18·39
1880	51 $\frac{5}{8}$	52 $\frac{7}{8}$	52 $\frac{1}{4}$	18·05
1881	50 $\frac{3}{8}$	52 $\frac{5}{8}$	51 $\frac{1}{16}$	18·25
1882	50	52 $\frac{3}{8}$	51 $\frac{5}{16}$	18·20
1883	50	51 $\frac{3}{16}$	50 $\frac{9}{16}$	18·64
1884	49 $\frac{1}{2}$	51 $\frac{3}{8}$	50 $\frac{1}{8}$	18·61
1885	46 $\frac{7}{8}$	50	48 $\frac{5}{8}$	19·41
1886	42	47	45 $\frac{3}{8}$	20·78
1887	43 $\frac{1}{4}$	47 $\frac{1}{8}$	44 $\frac{5}{8}$	21·10
1888	41 $\frac{5}{8}$	44 $\frac{9}{16}$	42 $\frac{7}{8}$	22·00
1889	42	44 $\frac{3}{8}$	42 $\frac{1}{16}$	22·10

London Silver Prices and the resulting Ratios between the Values of Silver and Gold, 1848-1921—continued

Year.	Lowest.	Highest.	Average.	Average Ratio of Value. 1 kg. Gold = x kg. Silver.
	Price of Silver (Pence per ounce standard).			
1890	43 $\frac{5}{8}$	54 $\frac{5}{8}$	47 $\frac{11}{16}$	19·75
1891	43 $\frac{1}{2}$	48 $\frac{3}{8}$	45 $\frac{1}{16}$	20·92
1892	37 $\frac{7}{8}$	43 $\frac{1}{4}$	39 $\frac{13}{16}$	23·72
1893	30 $\frac{1}{2}$	38 $\frac{1}{4}$	35 $\frac{3}{8}$	26·49
1894	27	31 $\frac{3}{4}$	28 $\frac{15}{16}$	32·56
1895	27 $\frac{3}{16}$	31 $\frac{3}{8}$	29 $\frac{7}{8}$	31·60
1896	29 $\frac{3}{4}$	31 $\frac{5}{16}$	30 $\frac{3}{4}$	30·59
1897	23 $\frac{3}{4}$	29 $\frac{13}{16}$	27 $\frac{9}{16}$	34·20
1898	25	28 $\frac{5}{16}$	26 $\frac{5}{16}$	35·03
1899	26 $\frac{5}{8}$	29	27 $\frac{1}{16}$	34·36
1900	27	30 $\frac{3}{16}$	28 $\frac{1}{2}$	33·33
1901	24 $\frac{15}{16}$	29 $\frac{9}{16}$	27 $\frac{8}{16}$	34·68
1902	21 $\frac{11}{16}$	26 $\frac{1}{8}$	24 $\frac{1}{16}$	39·15
1903	21 $\frac{11}{16}$	28 $\frac{1}{4}$	24 $\frac{3}{4}$	38·10
1904	24 $\frac{7}{16}$	28 $\frac{9}{16}$	26 $\frac{3}{8}$	35·70
1905	25 $\frac{7}{16}$	30 $\frac{5}{16}$	27 $\frac{13}{16}$	33·87
1906	29	33 $\frac{1}{8}$	30 $\frac{7}{8}$	30·54
1907	24 $\frac{1}{4}$	32 $\frac{7}{16}$	30 $\frac{3}{16}$	31·24
1908	22	27	24 $\frac{13}{32}$	38·64
1909	23 $\frac{1}{16}$	24 $\frac{7}{8}$	23 $\frac{23}{32}$	39·74
1910	23 $\frac{3}{16}$	26 $\frac{1}{4}$	24 $\frac{21}{32}$	38·22
1911	23 $\frac{11}{16}$	26 $\frac{1}{8}$	24 $\frac{19}{32}$	38·33
1912	25 $\frac{1}{8}$	29 $\frac{11}{16}$	28 $\frac{1}{16}$	33·62
1913	26 $\frac{1}{16}$	29 $\frac{1}{8}$	27 $\frac{9}{16}$	34·19
1914	22 $\frac{1}{8}$	27 $\frac{1}{4}$	25 $\frac{1}{4}$	37·37
1915	22 $\frac{5}{16}$	27 $\frac{1}{4}$	23 $\frac{5}{8}$	41·35
1916	26 $\frac{11}{16}$	37 $\frac{1}{8}$	31 $\frac{3}{8}$	30·80
1917	35 $\frac{11}{16}$	55	40 $\frac{13}{16}$	23·67
1918	42 $\frac{1}{2}$	49 $\frac{1}{2}$	47 $\frac{17}{32}$	20·31
1919	47 $\frac{3}{4}$	79 $\frac{1}{8}$	57 $\frac{1}{2}$	18·82
1920	38 $\frac{7}{8}$	89 $\frac{1}{2}$	61 $\frac{13}{32}$	20·80
1921	30 $\frac{5}{8}$	43 $\frac{3}{8}$	36 $\frac{7}{8}$	31·90

calculating the ratio of value between an ounce of fine silver and an ounce of fine gold:—

X ounces of fine silver = 1 ounce of fine gold.
 11 " " gold = 12 ounces of standard gold.
 1 ounce of standard gold = 934·5d.
 a pence = 1 ounce of standard silver.
 40 ounces of standard silver = 37 ounces of fine silver.

Therefore :—

$$X = \frac{12 \times 934.5 \times 37}{11 \times 40 \times a}$$

$$= \frac{942.995454 \dots}{a}.$$

Thus in order to arrive at the ratio of value we must divide the constant 942.995454 . . . by the price of silver as quoted in London. This calculation in effect assumes an almost stable London gold price as it stood practically from the twenties of the last century right up to the Great War. For the period from the commencement of the Great War the calculation must be based on the price of gold as it stood from time to time, or, where by reason of restrictions on dealings in gold no such quotations are available, the rate for the American dollar, which has on the whole kept at about gold parity.

CHAPTER IV

THE CHANGES IN THE MONETARY USE OF THE PRECIOUS METALS BETWEEN 1493 AND THE MIDDLE OF THE NINETEENTH CENTURY

¶ I. Developments from the Time of the Discovery of America to the End of the Eighteenth Century

IN the two centuries preceding the discovery of America gold, as far as we can establish that fact from deficient data, was the principal substance used for monetary purposes by civilised countries in Europe. The continued debasement of silver coins is understood to have led in those days to more and more extended use of gold coins by large traders. These were probably being imported into Italy in increasing quantities from the Orient, and spread thence over the whole of Europe, even as far as England. It has been stated that during that time the "gold standard" had actually been established in the most civilised countries; but the term "gold standard" should clearly not be used in this connection as a designation for a definite system of currency, for the gold standard in this technical sense—indeed, currency standards generally—did not, as we have shown, arise till much later. On the contrary, the monetary institutions of those days were marked rather by the characteristics of money of account, and the expression "gold standard" could in this respect signify only that within the limits of a system of money of account the actual use of gold currency predominated.

We must leave undiscussed the traditional explanation, that this state of affairs was brought about by the debasement of silver coinage. We must, however, in order to round off our remarks, draw attention to a circumstance upon which a special light is thrown by later developments, namely, that, as has been fully shown above, it is most probable, one might even say certain, that during that period the production of gold in relation to that of silver was considerably higher than it was from the beginning of the sixteenth to the middle of the nineteenth centuries. Even from 1493 to 1520, the statistics of Soetbeer show that the share by *weight* of gold in the joint production of the two precious metals amounted to 11 per cent., whereas in the period that followed it dropped as low as 2 per cent. Measured by *value*, gold had at that time a percentage of 57, whereas in the sixteenth and seventeenth centuries its percentage for a time dropped to under 20. During 1419, however, the Portuguese had rounded the Cape Bojador on the west coast of Africa, and gold dust was amongst the most important commodities which the Portuguese vessels brought to Europe from the African coasts. If it is, therefore, remembered that already in the last

quarter of the fifteenth century the production of silver in Germany showed a considerable increase, whereas no similar increase is reported as having taken place in the production of gold, we are justified in concluding that in the century before 1493 the proportion represented by gold was considerably higher even than would appear from the figures for the period 1493-1520. For a time in which the monetary system had not yet assumed a definite shape, in which, on the contrary, commerce used as money every substance that seemed to it adapted for the purpose, it can be taken as quite natural that the preponderance in the production of gold would make the use of that metal as money preponderant also.

But the mere statement that the use of gold predominated does not yet sufficiently define the monetary conditions at the time before the discovery of America. Mention must be made also of the fact that the use of metallic money was in those days still quite restricted, and that the primitive economic arrangements amongst the masses had not yet given way to institutions based on money, although the latter had made great progress during the Middle Ages.

A further extension in the use of money seemed to be a necessary consequence of the general economic development. The copious stream of precious metal which spread its volume over the Old World from 1520 onwards, made possible the enormous progress towards monetary institutions as we know them in modern times.

If we remember that by far the largest share in the increase which took place in the production of the precious metals during the sixteenth and seventeenth centuries fell to silver, it must appear as a necessary consequence that silver in those days must have driven gold out of its dominating position in the currency. This development had begun even before the discovery of the New World and of its wealth of silver. It began with the increase in the production of silver in Saxony, Bohemia, and the Tyrol. The continued debasement of gold coinage may also this time have added an impetus to this change and have made the ground more favourable for the acceptance of the new larger silver coins which then came into existence. It seems certain that the decisive factor must, in this case also, have been the large increase in the production of silver, in conjunction with the fact that silver met the most important monetary needs of the times to a much larger degree than gold. These needs were caused by the extension of the use of metallic money from the higher to the lower levels of the economic organisation, which had hitherto existed under conditions of "natural" economy. As far as commerce on a large scale was concerned, gold was just as suitable,

indeed even more so for currency purposes, as silver. For commerce in the middle and lower grades, however, for all those wide circles which from now onwards were interested in currency arrangements, the transactions of ordinary economic life were on so small a scale that they rendered gold far too costly a substance for monetary purposes. Only silver could be used for such transactions.

The circumstances of the production of the precious metals and the economic needs of the time accordingly went hand in hand in giving to silver the predominating position in monetary systems. But for this reason these two factors worked against each other in other respects. This was in regard to the value of money as against the value of the other economic goods, and in regard to the reciprocal relation between the values of the two precious metals in particular.

We have not yet come to the point when a more detailed study of the factors determining the value of the precious metals is called for. We need not enter upon such an investigation in order to prove that the extraordinary changes in the production of the precious metals, which strongly influenced within only a few decades the extent of the total supplies, are of real importance in determining the movements in the value of these metals. It is probable *a priori* that the sevenfold increase in the production of both metals in the course of the sixteenth century would have been sufficient to reduce the value of the precious metals in relation to that of other economic goods, and that in particular the ninefold increase in the production of silver, accompanied as it was by an increase in gold production of not more than half that amount, must have influenced the ratio of value between the two metals to the disadvantage of silver.

In point of fact, both these probabilities occurred, but by no means to the degree which would have corresponded to the extent of the changes in the production of the precious metals.

As an illustration of the developments in the value of money compared with those in the value of the other economic goods during the period under consideration, the table overleaf, which Rogers has calculated as actual average prices in England, may be given.

There is no doubt that the depreciation of money and the corresponding revolution in prices would have been much more marked had not a wider sphere of employment been provided for the large quantities of the new metal through the increasing necessity for a more widespread use of money. Because the greater production was met by a new economic demand, it did not have its full effect in depressing the value of the precious metals. But because this new demand was exclusively confined

	In the Years		
	1541-1582.	1583-1642.	1643-1702.
Wheat	13s. 6½d.	36s. 1d.	41s. 11¼d.
Barley	8s. 5¾d.	19s. 9¾d.	22s. 2¼d.
Oats	5s. 5½d.	12s. 5d.	15s. 2½d.
Beef	1s. 7d.	2s. 5½d.	3s. 5½d.
Butter	2s. 8d.	4s. 9½d.	6s. 1d.
Iron	26s. 2¾d.	33s. 11½d.	38s. 10d.
Wages of builders	3s. 4½d.	4s. 2¾d.	6s. 7¾d.
Wages of agricultural labourers	3s. 3d.	4s. 10d.	6s. 4¾d.

to silver currency, because the wide economic field which was opening up in those days for the employment of money had use only for silver, which was only suitable for small payments, the effect of changing productive conditions on the ratio of value of the two metals appears to be much smaller than their effect upon money value as such. By the rapidly progressive expansion of the use of money in the lowest strata of economic society, the importance of silver as against gold, and its utility in the monetary systems, increased to such an extent that, notwithstanding the very much greater increase in the output of silver, there was only a relatively small change in the ratio of value in favour of gold. It changed from 1 : 10·75 to no more than 1 : 12·25.

The period from about 1620 onwards showed an opposite tendency in essential respects. The production of silver fell off, whereas that of gold went on increasing. At the same time, for various reasons, the demand for gold for monetary purposes grew. The European world had in those days been devastated by long and destructive wars, and in such uncertain times gold, which is easier to transport and to hide, is far more sought after than silver. From the second half of the seventeenth century an additional factor came into play—increasing international commerce and a greater volume of transactions. Accordingly, just as in the previous period a wider field was found in the case of silver by the growing use of money by the masses, so now in the case of gold also a new sphere for its employment was found, and the demand for it consequently grew. In proportion as international commerce developed, and it became necessary to transport large sums of money over large distances, and in proportion also as the volume of transactions in domestic trade

increased, the need of media of payment which contained high value in a small bulk increased. In these circumstances gold enjoyed greater advantages than silver. Only this increased demand for gold explained satisfactorily the fact that from 1620 onwards gold rose substantially in value as compared with silver, although at the same time the share of gold in the joint production of the two metals registered a not inconsiderable increase. The ratio of value between silver and gold went from 1 : 12.25 during the period 1601-1620 to 1 : 14, which was the average in the succeeding twenty years. In the years 1701-1720 it rose on an average to 1 : 15.21. This was the greatest change this ratio had undergone ever since the beginning of the Middle Ages, and even in subsequent times it was only exceeded during the depreciation of silver in the last thirty years.

The fact that it was possible for supplies of silver from the New World, which had begun to arrive in 1545, not to affect the ratio of value of the two metals to the full extent much before 1620, by which time the continuous flow of fresh supplies had gradually piled up very large stocks, must not be lost sight of in connection with the extraordinary depreciation of silver; but attempts which have been made to ascribe the great changes in the ratio of value to the influence of currency legislation, because during the period in question gold coins were throughout rated in the official ordinances at a higher figure than were silver coins, must be rejected. The casual connection is really of an opposite kind. Whoever understands the nature of the monetary conditions of those days, knows that the rating by governments of gold and silver coins not only had no effect on the ratio of value between the uncoined metals, but it did not even succeed in fixing the values of the coins. On the contrary, the coins were fluctuating in value in accordance with dealings in the open market, and the frequent changes in the official schedules were rendered necessary by the official valuation not conforming to the actual market value. Far from causing changes in the market value of the two precious metals, the alterations in the statutory schedules were the result of changing market values of the metals.

Whilst in the hundred years 1620-1720 the effect which production had on the ratio of value was not nearly as great as the effects of the changing demand for gold and silver for currency purposes, the rich gold supplies which came from Brazil in the succeeding decades had a very visible influence. The ratio of value began to change in favour of silver. Whilst it had remained in the decade 1701-1710 at an average of 1 : 15.27, it stood between 1751 and 1760 at 1 : 14.56. In addition to being affected by the extraordinary increase in the output of gold, this change

may also have been influenced by the fact that the continually growing commerce with India was absorbing larger and larger quantities of silver.

Apart from this effect on the ratio of value, which, it soon became clear, was purely temporary, the great increase in the production of gold had the permanent result that in England, the country which came more and more to occupy the first place in economic progress, the use of gold currency was gaining ground. Already towards the end of the seventeenth century gold had largely supplanted silver in the circulation in England. This development was facilitated, as has already been mentioned above in another connection, by the bad state of the silver currency, and, after the reform of the silver coinage in 1695, by the attitude taken up by the Treasury, which accepted in payment the gold coin, the guinea, at a higher value than corresponded to the market ratio between silver and gold. Until the year 1717, at all events, private traders were not bound by the rating of the Treasury. If, notwithstanding this, the guinea was accepted in payment, even by private traders, at a rate of exchange which was more favourable than was justified by the market ratio between the two metals, this was only possible because the progressing commerce of England gave greater and greater scope for the employment of gold currency. In 1717 and 1718 a double standard system was formally introduced. The guinea received a fixed rate of exchange of 21s., which was binding on private traders, and this rate corresponded to the ratio of value of 1 : 15.2. In point of fact, England had already an almost exclusively gold currency in circulation, and as the new legal ratio was still too favourable to gold, the circulation of gold even continued to increase in England in the succeeding years. From 1701 to 1816 gold was coined to the value of more than 90 million pounds sterling, as against only some £908,200 of silver.¹

It is a noteworthy fact that the English double standard had not the effect of bringing the market value of the precious metals into harmony with the legal ratio. On the contrary, the ratio which obtained between the two metals in the open market deviated more and more from the legal ratio in the years which followed the introduction of the double standard. The average for the decade 1711-1720 has been calculated by Soetbeer at 1 : 15.15. This approximated to the statutory ratio of 1 : 15.2. Later, however, the market ratio went to 1 : 14.56 on an average of the years 1751-1760. In those days England had no silver to dispose of; it only had a small supply of worn silver currency

¹ Kalkmann, *Englands Übergang zur Goldwährung*, Strassburg, 1895, pp. 64, 65; Lexis, *Handwörterbuch der Staatswissenschaften*, 3rd ed., vol. v, p. 39.

in circulation. In view of this, it could not attempt to counteract the relatively high increase in the value of silver except by voluntarily accepting a large part of the freshly produced gold, and thereby to some extent paralysing the influence of the increase in gold production. The tremendous advance of English economic institutions during the eighteenth century rendered a large increase in the circulation absolutely necessary, and—having regard to the size of the transactions—an increase in the gold circulation became especially and pressingly desirable.

In so far as the monetary conditions of other countries also are concerned, the increase of gold production about the middle of the eighteenth century appears to have had a certain amount of influence. An increase in the gold circulation appears to have been universal in those days, especially in the countries economically most developed, such as France.

Whereas, however, in these countries the change which was setting in in the last three decades of the eighteenth century in the production of the precious metals led the way back to an almost exclusive circulation of silver, England managed to preserve for itself permanently, notwithstanding changes in the production, and fluctuations in the relative value of the precious metals, the gold circulation which it had established. This it did by measures which prepared the way for a gold standard. The nature of these steps has already been explained in more detail in the chapter which dealt with the evolution of the gold standard. The rapid fall in gold production after the exhaustion of the gold-fields of Brazil, together with the continually increasing production of silver, led to a displacement of the ratio of value to the disadvantage of silver. In the second half of the nineties the market ratio reached a point at which it appeared profitable to begin the coining of silver at the London Mint and to melt down the gold coins. As, however, the substitution of a preponderating silver circulation in place of the existing gold circulation appeared undesirable to the English government and to Parliament, the right of free coinage of silver, which was still formally in force, was suspended (1798). This proceeding is of interest in the history of the evolution of monetary systems, as it was the first step in the setting up of the gold standard and in co-ordinating gold and silver coinage into one system. We must now lay stress on the importance of this step in regard to the actual extent to which the precious metals, and especially silver, were employed for monetary purposes.

The closing of the London Mint to silver in the year 1798 was the first "demonetisation" of silver. On its purely formal side, this step amounted to the closing to silver of a large and important area of use, and it may, therefore, be considered as being

in the nature of an artificial restriction, by way of currency legislation, of the demand for silver.

Currency legislation appeared here for the first time as determining the extent to which the two metals should be employed for monetary purposes, and it seems therefore directly to influence the reciprocal value of the two metals. It signalises the appearance of the great controversy which was destined later largely to dominate the entire problem of the "currency question," namely, whether currency legislation was the cause of the depreciation of silver and whether by way of legislation the value of silver could again be raised and stabilised.

For a true appreciation of the importance of the suspension of the coinage of silver by England, the following factors must be taken into account:—

The step taken, although of a formal nature, denoted an epoch-making change in English currency. In actual practice, however, it merely continued existing conditions. The gold circulation was safeguarded against the danger of being driven out by the depreciating silver, and the demand for currency in England would, in the future, as it had been in the past, be directed exclusively to gold. This existing state of affairs was consolidated by the closing of the Mint to silver, because it conformed to the needs of commerce, and because public opinion agreed that the replacement of a gold circulation by a silver circulation would be detrimental to the interests of English trade. This line of argument throws a true light on the assumption that the demand for silver was artificially restricted by the closing of the English Mint to the coinage of silver.

The fact that at the end of the eighteenth century the depreciation of silver made it possible for this metal to find an outlet by it being turned into coin at the English Mint was an automatic effect of the working of the existing double standard, but it was not in essence the result of an actual market demand for silver as a medium of payment. The legislative act which brought about the cessation of the coinage of silver did not, therefore, restrict artificially any actually existing demand for silver. On the contrary, it was simply the expression of the fact that English trade had no use for the increasing quantities of silver. Legislation was thus not the real cause of the permanent contraction of the use of silver in English trade, and of the consequences of such contraction upon the ratio between the values of silver and gold. It would be more correct to say that legislation was but the instrument which gave effect to the requirements of commerce, whereas previously the only way in which expression could be given to these requirements was by changes in the ratio of value of gold and silver coins. The closing of the Mint to silver did not restrict the

demand for silver for monetary purposes. On the contrary, the stoppage of the coining of silver was brought about by reason of English trade requiring not silver but gold.

The vital significance of this action is to be found in the fact that for the first time a big country, the country which ranked first in economic development, was disinclined to accept within its circulation silver in any such quantities as were being made available by the existing state of production. For the first time we find different methods of treatment of gold and of silver, corresponding to the actual difference between the two metals. Silver is restricted to the sphere of small payments for which gold has too high a value. The sphere of larger payments, for which silver is too heavy and inconvenient, is retained as an exclusive preserve of gold. This restriction of silver coinage to a definite sphere of functions was at the same time the first and most important step towards the establishment of a uniform system of currency consisting of both gold and silver coins. Thus, in the gold standard we find a result previously impossible of attainment—a co-ordination of gold and silver coinage. We also find in it a restriction of the silver in circulation, a restriction which gave practical expression to the requirements of a highly developed economic society.

¶ 2. The Developments up to the Time of the Gold Discoveries in California

In the eighteenth and in the first decades of the nineteenth century the necessity for a preponderating circulation of gold did not exist outside England. The more primitive economic conditions still provided a wide sphere of employment for silver, and although gold, which from the middle of the eighteenth century was appearing in ever larger quantities, was accepted by no means unwillingly in commerce, when the production of gold began to fall and that of silver to increase, commerce showed no marked signs of unwillingness to be deprived of gold. The lines of development of monetary systems on the European Continent in the last years of the eighteenth century and in the first half of the nineteenth have one characteristic in common, namely, the fact that silver currency almost exclusively dominated, however largely the organisation of the currency systems varied in the different countries.

In Germany in the second half of the eighteenth century the "alternative system" had arisen out of the chaos of monetary species, and had gained acceptance. On the 14th July 1750, Frederick the Great issued an ordinance which is of fundamental importance in the history of the development of German

currency systems, as it introduced the "taler" with a fineness of $\frac{1}{14}$ th of the Cologne silver-mark, a coin from which the Reichsmark ultimately developed. In this ordinance the new Prussian gold coin, the Friedrichsdor, was, it is true, fixed at a value of 5 taler in silver, and it was also laid down that the "proportions between gold and silver" were to be strictly observed (Clause 11). The same edict, however, already contained the provision (Clause 5) that all bonds in terms of gold coins should be converted into Friedrichsdors, and all bonds in terms of silver coins should be converted into "current" silver coins, and that in each case they were to be paid out in accordance with these conversions. Gold and silver coins could not be simply substituted one for the other as a medium of payment. The fixed ratio between gold and silver coins thus lost its principal signification. It is seen, therefore, that on the basis of the ordinance of 1750, the Prussian currency system is characterised not as a double standard system, but as an, as yet, not fully developed alternative standard system. Commerce did not observe the relation of one Friedrichsdor=5 silver talers. The ratio was too unfavourable to gold, and the Friedrichsdor soon went to a premium as compared with its legal value in silver money.

Subsequently the fixed relation between gold and silver currency was abolished. In a rescript of the 30th July 1764, an "agio" up to 5 per cent. was established between the Friedrichsdor and the "current" silver coinage, and the current quotation of the Friedrichsdor was permitted to appear in Stock Exchange price-lists. Finally, an order of the 2nd February 1787 provided that the gold coin should have no legally determined relation to the silver coins, but that the "determination," the "agio," should be "left simply to competition."

In Austria, development was along similar lines. By an Ordinance, dated the 21st February 1786, Kaiser Joseph repealed "all prohibitions and penal provisions against premia on different kinds of money." In the other German territories attempts to fix a definite relative value between gold and silver coins were also being abandoned. Thus in an important agreement made in the year 1765 between the most important South German States, the ducat was rated at 2 gulden and 10 kreuzer in the 20-gulden standard, but the contracting States were allowed "to abate the premium of 10 kreuzer in totum or in tantum."

From the beginning, however, silver preponderated to a marked degree within this formal alternative standard. The silver currency in circulation played a much larger part than did gold. Further, to the general public it appeared as the actual currency of the country, the gold coins being regarded more and more merely as "trade coins." This is clearly shown by the fact that

only silver coins were regarded as being an unchangeable unit of value, whereas gold coins with a fluctuating rate of exchange were subject to varying premia upon their normal legal value. As already stated, in the year 1764 the Friedrichsdor was allowed to be officially quoted, and the South German Currency Union of 1765 laid down the rule that changes in the official rating of gold and silver coins were "never to be made in rising values of silver (which must be preserved without alteration on the 20-gulden standard), but only in falling values of gold." From this interpretation it followed that contracts of payment expressed in terms of money, without more specific definition, were interpreted as obligations to pay in silver currency. In Prussia, the law of the 29th of March 1764, which restored an orderly currency after the disturbed conditions of the Seven Years' War, prescribed that bonds expressed in terms of "Courant" or simply in money were payable in silver currency, and only in Friedrichsdor when gold or Friedrichsdor were definitely specified.

In England, the alternative standard system, with a fluctuating rating for gold, had already proved impossible a century before. It became untenable when gold currency came to form the largest part of the money in circulation, and steps were accordingly taken in the year 1718 expressly to prevent any further alterations in the rating of the guinea. In Germany, however, circumstances were different. The people were not so well off, and transactions were on a smaller scale. Silver, accordingly, still sufficed during the first part of the nineteenth century to meet the needs of commerce satisfactorily, and the lack of a sufficiency of gold in circulation was not found inconvenient. As, however, gold currency was available only in restricted quantities, and as in commerce it played only a subsidiary rôle, the fluctuations in the rating of gold currency appeared bearable, especially as German traders were accustomed, in view of the existing multiplicity of different types of coinage, to take into account in their calculations fluctuations in the rates of exchange of the innumerable types of currency in circulation.

It is true that the fluctuation in the rating of gold coins in subsequent years contributed to the gradual crippling of the gold portion of the German alternative standard. Coins, the value of which varies from day to day, are not readily accepted in payment, and gold currency could not, therefore, establish itself properly in Germany. Thus, later events in connection with currency reform in Germany showed that German gold coins which had been minted were melted down and exported to a far greater extent than was the case with silver coins. Diminution in the production of gold had also substantially contributed to a slower development in the use of gold currency in Germany.

England, the country with the gold standard, attracted a very considerable part of the new gold, and Germany, just as most other Continental States, saw herself more and more under the necessity of using silver for supplying the needs of her circulating currency.

Thus the German monetary system slid imperceptibly from an alternative standard to a silver standard pure and simple.

In Prussia, in the year 1830, silver currency was raised to the status of a substitute for the Friedrichsdor in all gold payments to be made to the Treasury. The definite rate of $5\frac{2}{3}$ taler for a Friedrichsdor was fixed. In the next year the Friedrichsdor was allowed in lieu of silver in payments at the same rate. At the same time the Prussian State Administration went completely over to silver. All claims and payments which had previously been fixed in terms of gold were recalculated into silver currency at the rate of $5\frac{2}{3}$ taler for a Friedrichsdor.

The South German Monetary Union of 1837, which at last succeeded in creating orderly conditions to the south of the River Main, made no mention whatever of gold coins. The same was the case with the Dresden Currency Convention of 1838, which comprised all the States within the Customs Union. The fact that gold coins stood outside the actual monetary system could not be more clearly shown than by this tacit ignoring of them.

The development of the silver standard system was formally concluded by the Vienna Currency Convention of 1857. In the negotiations which preceded this convention the question of the standard was raised for the first time for Germany. When, in November 1854, the Currency Conference, agreed upon in the Prusso-Austrian Trade Treaty of 1853, met in Vienna, the discovery of the Californian and Australian goldfields had completely altered the production of precious metals. Austria proposed that the new monetary system to be set up in Germany should be established on the basis of a gold standard, in order to facilitate communion between Germany and the channels of world trade in which gold played a dominant part. But the representatives of the German States refused to negotiate on this basis. They argued as follows. It was questionable whether all obligations to pay expressed in definite quantities of silver should be changed, on the basis of a more or less arbitrary ratio, into obligations expressed in gold, especially at a time when further depreciation in the value of gold could be expected, or was at least to be feared. It seemed in any case certain that the value of gold would be subjected to a good deal of fluctuation, and would have to pass through several crises before it reached in any degree a point of fixity and permanency.

The differences of opinion between Austria and the German

States appeared unbridgeable. The negotiations were adjourned, and were not resumed until the year 1856. Austria decided in the meantime to drop the idea of a gold standard, and so, on the 24th of January 1857, the Vienna Currency Convention was negotiated on a silver standard basis. The Convention proclaimed in a formal and convincing manner the "maintenance of a pure silver standard." The coinage of all existing types of gold currency was prohibited, and in their place two gold coins, "Vereins-Handels-Goldmünzen" (Treaty Trade Coins), were introduced. They were the "krone" (crown) and the "halbe krone" (half-crown), with a fineness of 10 and 5 g. respectively. In order, however, to keep the silver standard completely intact, it was prescribed that the value of the gold crowns should not be fixed in terms of the silver currency of the country, but should be left to the effects of supply and demand. Furthermore, these coins were not to be made subject to a permanent and fixed rating by the Treasury. Any such ratings were to have a period of validity at most not exceeding six months. They would then have to be renewed on the basis of the average quotations on the Stock Exchange. It is true that the old territorial gold coins, the further coinage of which was now prohibited, were still given the privilege of a fixed rating by the Treasury, but the governments were enjoined gradually to withdraw these coins from circulation.

Those German States which stood outside the Customs Union also established a silver standard, the sole exception being the Free City of Bremen, in which a gold standard subsisted.

The custom of paying in gold in certain cases, and in certain branches of commerce, continued in varying degrees in individual German areas, chiefly in Hanover and in Brunswick. In these States by far the largest amounts of gold coins were minted, although here also silver was the predominating medium of payment and the real currency of the country.

On the whole, in the several States of what is known to-day as the German Empire, the coins struck during the period 1764-1871, in so far as data are available, aggregated as follows, after deducting the coins called in:—

Gold coins	530.9 million marks.
Silver coins of full legal tender .	1714.7 " "
Silver token coins	83.6 " "

Of these numbers at the time when the currency reform took place the following remained in circulation:—

Gold coins	95 million marks.
Silver coins of full legal tender .	1456 " "
Silver token coins	79 " "

Thus, only about three times as much silver was coined as gold. The latter coins, however, were, for reasons already stated, so little able to keep in circulation that the actual quantity of gold currency in circulation in Germany in the year 1871 was only $\frac{1}{18}$ th of the silver in circulation.

Whilst in Germany the alternative standard led to an almost exclusive circulation of silver, and finally to a definite legal establishment of the silver standard, in France silver predominated within the double standard system until the discoveries of gold in California brought about a marked change.

During the seventeenth and eighteenth centuries continuous attempts were made in France to fix relative values between gold and silver coins by statutory schedules. These schedules were frequently altered, for as the precious metals did not obey the regulations, the regulations had to alter to conform with the market fluctuations in gold and silver, unless indeed people were prepared to abandon altogether coins of one or other of the metals.

In so far as the actual conditions of the French currency in circulation are concerned, it seems certain that the large production of gold in Brazil greatly increased the amount of gold currency. In the last decades of the eighteenth century a change took place corresponding to the decrease in the production of gold and to the increase in the production of silver. The shifting of the market in favour of gold led to the melting down and export of the gold coins now undervalued by statutory regulations. This state of affairs was the cause of the issue of a new schedule which subsequently became of the greatest importance. At the instance of Calonne, Louis XVI's Minister of Finance, there appeared, on the 30th of October 1785, a "*Déclaration du Roi portant fixation de la valeur de l'or relativement à l'argent, etc.*," which reduced the fineness of the gold coins without lowering their nominal value. The ratio of value between silver and gold which was used as a basis for the measurement of the new fineness was as 1 : 15.5. This schedule was later retained in the legislation of the Republic when the law of 7th Germinal of the year XI (28th March 1803) reorganised the French monetary system on the basis of the franc.

It should be mentioned that in the French law of 1803 the principle of a double standard with a permanently fixed rating of the two metals is by no means precisely expressed. On the contrary, the law based the form of the French monetary system on silver, and declared that: "Five grammes of silver of $\frac{9}{10}$ th fineness constitute the unit of currency." Gold came in only in a subsidiary position, it being prescribed that "gold coins of twenty and fifty francs are to be struck." The original draft of the Bill even contained the explicit reservation that the gold coins (but

not the silver coins) could, if necessary, be altered in fineness. But in point of fact no such alteration was ever made, and as the gold and silver coins ranked equally as a legal medium of payment, and could be substituted one for the other at their nominal value in contracts of payment, and as, furthermore, both metals were freely coined (on payment of a moderate seigniorage), the French monetary system of the year 1803 is properly designated as a double standard system.

The ratio of value 1 : 15·5 introduced by Calonne was much too favourable to gold. The depreciation of silver, however, which began in the last quarter of the eighteenth century and led England to suspend the free coinage of silver, at the beginning of the nineteenth century, when the Currency Law of 1803 was passed, brought the market ratio into approximate agreement with the legal ratio of the French double system.

The downward path of the relative value of silver continued, however, during the first half of the nineteenth century. The further drop in the production of gold, which went on up to the twenties, supplemented the effects of the increased demand for gold, which, as experience shows, is an ever-present concomitant of war. From the second decade of the nineteenth century the share of gold in the aggregate production of the two precious metals increased, and the ratio of value also showed a temporary change in favour of silver. The demand for gold in England, which had introduced at the end of the eighteenth century a paper currency and was now attempting to obtain as large gold supplies as possible in order to resume cash payments again, soon led, however, to an increase in the relative value of gold. Added to this, as a fact of greatest importance, was the vast development of international trading, in which trade the English gold sovereign occupied, in ever-increasing degree, the position previously held by the Spanish silver piastre.

This brought it about that, notwithstanding the continuous rise in the production of gold, the market ratio of value was, from the twenties onwards, continually more favourable to gold than was the legal ratio in France. In particular, in the forties, a strong tendency towards a further depreciation of silver showed itself. The London price of silver fell in 1848 to 58½d., corresponding to a ratio of 1 : 16·12. On the Paris Bourse also the price of gold was continually rising. These dealings in gold and silver took place in "prime" and "perte" of so many thousandth parts (promille) of the prices of the coins. The premium for gold in the year 1847 already exceeded temporarily twenty promille. The average gold and silver prices of the year 1848 give a ratio of 1 : 15·94. As a result of the political disturbances of that year the premium on gold rose temporarily to sixty-five promille,

whereas the highest premium on silver was only three promille. The ratio which follows from these prices is 1 : 16.66.

The consequence was that the large increase in the currency in circulation in France during that period fell exclusively to the share of silver, whereas the amount of gold in circulation was continually diminishing by melting and export. From 1830 to 1847 (we have no figures available for the earlier years) French trade statistics show predominating exports of gold. In thirteen of the eighteen years an excess export of gold was registered. In the aggregate these excess exports of gold amounted to 73 million francs. To this must be added the amounts which were exported clandestinely or under false declarations, and the entire French industrial consumption of gold. During the same period an uninterrupted inflow of silver took place which (after deducting exports) amounted to 1692 million francs.

The coinage of silver at the French mints amounted from 1820 to 1850 to 3186.5 million francs. On the other hand, the coinage of gold in the same period amounted to only 483.4 million francs. From 1842 to 1847 gold coins were struck to a value of only 17.3 million francs. The silver coins struck at the same time amounted, however, to 427.8 million francs. The figures of the export of gold show that during these periods the gold coins which were melted down exceeded by a considerable amount the numbers coined. The gold currency which remained in circulation went to a premium. The gold 20-franc pieces were quoted on the Paris Bourse at a premium, the maximum amount of which fluctuated in normal times between 10 and 20 promille, and during the disorders of the year 1848 went even to 120 promilles.¹

In face of the fluctuations in the market relation between gold and silver it was not found possible under the French double standard either to incorporate gold in a manner free from objection or to keep the two metals in concurrent circulation. Towards the middle of the nineteenth century the French circulation consisted in the main of silver and of a small supply of gold coins with a varying premium. Here too, therefore, silver had again won for itself in the first part of the nineteenth century almost complete dominance.

In those countries which had adopted the French system of francs—namely, in Belgium, in Switzerland, and in Italy—developments were similar, except that in these three countries the silver standard was explicitly recognised. Thus, the Belgian law of the 5th of June 1832 adopted the silver franc as a unit of coinage without ordering or permitting the coining of gold francs.

The domination of silver on the European Continent during

¹ Cf. Lexis' article, "Doppelwährung," in the *Handwörterbuch der Staatswissenschaften*, 3rd ed.

the first half of the nineteenth century, and the established belief in the permanent nature of this state of affairs, is best shown by the political regulation relating to coinage which was decided upon by the Netherlands in the year 1847 on the eve of the tremendous upheaval in the conditions connected with precious metals and currencies.

Of all central European States the Netherlands stood alone in the first part of the nineteenth century as a country with any considerable circulation of gold. By a law passed on the 28th September 1816 they had adopted a double standard based on the relation of 1:15·873. At this ratio gold was overvalued as compared with the actual market ratio. The consequence was that Holland coined gold exclusively, and no silver money at all was struck. It is true that when, on the reform of the Dutch currency about the middle of the nineteenth century, coins were withdrawn from circulation, the results gave 94 million florins in silver and only 50 million florins in gold. This was, however, due more to the fact that the old silver coins had been too worn to make profitable their melting down for export. The gold currency, on the other hand, which was the sole medium in commerce with other countries, had a steady outflow. During the period 1816-1847 as many as 172 million florins had been coined in gold, of which, as stated above, only some 50 million florins were still available in 1847. Notwithstanding the coinage of these large quantities of gold, silver ranked in the public mind, both before and after, as the real currency—a currency which corresponded much more to the habits and uses of the country. The recognition of the fact that, in the existing state of the ratio, the admission of gold rendered impossible any permanent improvement in the circulation of silver ultimately gave rise to legislation directed against gold.

After long drawn-out negotiations, a currency law was passed on the 26th November 1847 which substituted a silver standard pure and simple for the actually existing double standard. After the passage of this law, the gold currency in circulation was withdrawn in the year 1850 and a silver circulation substituted at a considerable cost.

No more definite expression of the then generally accepted view, that in the more or less immediate future silver would become the currency metal of the European Continent, could have been given than that implied in the Dutch currency reform.

In the United States of America matters shaped themselves in an absolutely different way from the developments in the European States. American money was based originally on the law of the 2nd April 1792. This law provided that the ratio between gold and silver in all coins of the U.S.A. should be 1:15,

that the gold and silver coins should be legal tender for all payments, and that the mints should coin gratuitously gold and silver coins. These provisions set up the double standard formally and much more completely than had previously been done in England and later in France.

The ratio of 1 : 15 corresponded at the time of its introduction more or less to the actual market relation. But the set-back in the relative value of silver which in England had led to the establishment of the gold standard, and in France to a preponderance of silver in circulation, soon produced a difference between the market relation and that laid down in the American law. As a result, silver currency became also the dominating medium in the circulation of the U.S.A. The few gold coins which remained in circulation in America went to a premium, which rose in the twenties of the nineteenth century to 5 per cent. The greater part of the American circulation consisted of foreign silver coins, especially of Spanish piastres, which circulated at a rate of exchange fixed by law.

American economic life developed early, and trade connections with England were lively. Under these conditions it was inconvenient to do without a gold circulation. In order to render possible the creation and preservation of a gold currency, a law, passed on the 28th June 1834, reduced the fineness of the gold dollar to such an extent that the ratio of the American double standard became as 1 : 16.

This brought the legal ratio again into substantial conformity with the ratio on the world's market, and for several years the amounts of gold and silver coin more or less balanced. From the beginning of the forties, however, an excess of gold began to be coined, and the drop in the value of gold which set in from 1848 resulted in native silver coins being kept in circulation only by dint of a premium, innumerable foreign silver coins, circulating at varying rates of exchange, serving the purposes of token money.

Thus about the middle of the nineteenth century a preponderating excess of one or other of the two precious metals was in circulation everywhere, both in the countries with a legal double standard as well as in countries whose legislation had sanctioned the simple standard, either of gold or of silver.

In this distribution of the two metals, silver currency dominated absolutely on the European Continent and in the greater part of the extra-European world, especially in the vast Asiatic States—India, China, and Japan. Next to England only a few smaller States, such as Portugal, and further, the U.S.A. and English Colonies, such as Canada, Australia, had a preponderating, but in itself inconsiderable, circulation of gold.

This unequal division of the world into gold and silver countries

appeared, in the then existing state of production of the precious metals, to be established for some time to come. The small increase in the world's supplies of gold by the gold production of the period not only did not permit of any transition to a gold standard, but did not even appear to make it possible that a sufficient supply of gold for monetary purposes would be forthcoming, even for those countries where gold and silver were used in equal degrees on a double standard. The great economic progress brought about in the thirties and forties of the nineteenth century by the increasing use of steam-power rendered a larger employment of gold currency desirable for the countries of the European Continent; but even this could not give rise to any practical result in the sphere of international currency organisation and in regard to the currency policy of individual States, so long as a sufficient supply of gold was not available to take the place of the silver money in circulation.

3. The Discoveries of Gold in California and Australia, and their Effect on the Market of the Precious Metals

About the middle of the nineteenth century many events combined to create a complete upheaval not only in the conditions of production, but also in those governing the demand for the two precious metals.

The enormous increase in the production of gold resulting from the discovery of goldfields in California and Australia has already been outlined. In the two decades 1850-1870 gold was produced to an amount of nearly 4 million kg. in weight, and to a value of nearly 11 milliards of gold marks. This increase in the world's supply of gold exceeded the total amount of gold in circulation during the first decade of the twentieth century in Germany, France, and England, which totalled approximately 10 milliard gold marks. The civilised world was suddenly presented with the necessary material for a considerable extension in the employment of gold as money, and that at a time when the most brilliant improvements in production and transport were everywhere forcing forward the development of economic institutions at a tremendous rate: at the time, in fact, when the increase in the volume and development of commerce was making it a pressing necessity to use a more valuable, and thus more convenient, medium of payment than silver.

Contemporaneously with the enormous new supplies of gold, the demand for silver for transmission to Asia was considerably increased. The need was partly caused by large Indian silver loans, contracted for the building of railways, for the combating of recurring famines, and for the suppression of the Mutiny of

1857. To a certain extent also increased shipments of silver were caused by the rise in Indian exports. Above all, the American Civil War had eliminated for some years the cotton supplies from the Southern States of the Union, and the European cotton industry consequently saw itself under the necessity of finding a substitute in Indian cotton. The excess of exports from India developed in those days as follows:—

Average per Financial Year.	Excess of exports of goods (1000 Rps.).
1840-41 to 1849-50 . . .	65,170
1850-51 „ 1859-60 . . .	88,240
1860-61 „ 1864-65 . . .	254,110
1865-66 „ 1869-70 . . .	201,000

These circumstances resulted in silver exports to India assuming enormous proportions. There were individual years in which the net imports of silver into India exceeded the total contemporaneous world-supplies of silver, as will be seen from the following table:—

Periods.	Silver Production. Kg.	Excess of Imports of Silver into India.		Excess of Silver Production over Indian Silver Imports in kg.
		1000 Rupees.	Kg. ¹	
1841-1850	780,415	15,325	163,900	616,515
1851-1855	886,115	21,846	233,650	652,465
1856-1860	904,990	100,725	1,077,380	-172,390
1861-1865	1,101,150	99,680	1,066,100	35,050
1866-1870	1,339,085	94,290	1,008,450	350,050

In the second half of the fifties India absorbed about 172,000 kg. more silver per annum than the new yield of the corresponding period; in the first part of the sixties also, only an inconsiderable part (some 3·2 per cent.) of the silver production remained available for the world outside India. The greatest excess in Indian imports of silver was registered in the financial year 1865-66 with a figure of 186,687,000 rupees=about 2 million kg. of silver, whilst the total world production amounted to only 1·2 million kg. Succeeding years brought a rapid and considerable reduction in the Indian demand.

¹ 93·5 rupees=1 kg. silver.

The increased production of gold and the stronger demand for silver had the direct effect of changing the ratio of value subsisting between the two metals. Whereas from the beginning of the eighteenth century the value of silver as compared with that of gold had shown on the whole a downward tendency, it now began to rise. The quotation of silver in London showed an upward tendency (*cf.* table on p. 112). The average price for the year 1859 was $62\frac{1}{8}$ d., the corresponding ratio of value being as 1 : 15.19. The highest price of silver was $62\frac{3}{4}$ d., corresponding to a ratio of value of 1 : 15.03. The appreciation in the value of silver affected France. From 1850 onwards the premium on silver, which had till then been only small, showed a considerable increase, and the premium on gold gave place to a "discount" during considerable periods. The price of silver reached its maximum in the course of the year 1864, when a premium of 38 promille was attained. This quotation and the simultaneous price of gold gave a ratio of value of 1 : 15.15.

Both on the London as well as the Paris bullion market gold fell, as compared with silver, considerably below the ratio upon which the French double standard was based.

¶ 4. The Expansion in the Circulation of Gold and its Effects on the Value of the Precious Metals

The immediate result of the change which had taken place in the ratio of value between the precious metals was a corresponding upheaval in the French circulation. In contrast with the previous conditions, it now became profitable to bring gold to the French mints for coinage, and to melt down and export silver coin. The amounts of gold coined took on enormous proportions from the year 1851, whilst at the same time the coinage of silver shrunk for a time to quite insignificant dimensions. From 1851 to 1866 gold coined in France amounted to 5608 million francs, whereas the silver struck amounted to only 268.6 million francs. The maximum of gold coined in any one year was reached in 1859, when the figure stood at 702.7 million francs. The smallest amount of silver coinage struck in a year was in 1864, when it totalled 160,840 francs. During the ten years 1857-1866 silver coins were struck to a total of not more than 35.1 million francs.

These figures have further light thrown upon them by the statistics of the French trade in the precious metals. The table on the following page shows the change which took place.

Whilst during the period from 1830 to 1847 silver was imported in large quantities and gold exported in still larger amounts, the transition period between 1848 and 1851 brought an excess of

imports of gold, whilst silver was still flowing in strongly. The period 1852-1864 showed, year by year, an excess of exports of silver, which aggregated $1\frac{2}{3}$ milliard francs. At the same time an exceptionally large import of gold took place. This latter continued in the years from 1865 to 1870, whilst, as a result of the new set-back in the value of silver which was already making itself noticeable, silver began again to be imported into France in larger quantities.

Years.	Gold.		Silver.	
	Excess of Imports (in million frs.).	Excess of Exports (in million frs.).	Excess of Imports (in million frs.).	Excess of Exports (in million frs.).
1830-1847	..	73	1,692	..
1848-1851	146	..	609	..
1852-1864	3,377	..	..	1,726
1865-1870	1,630	..	562	..

The large export of silver of the years 1852-1864, joined to the considerable industrial use of silver, swallowed up the larger part of the French silver currency in circulation. The gold which was coming in supplied a more than sufficient substitute. Thus, in the course of a few years, the almost exclusive circulation of silver gave way to a circulation in which gold preponderated greatly, thanks to the automatic effects of the French double standard, which attracted gold and repelled silver as soon as silver rose above the ratio of 1 : 15.5.

There is no doubt that the French monetary system exercised a levelling influence on the ratio of value between the metals in those days of a complete upheaval of the production and distribution of the precious metals. Because France could place at the disposal of the higher demand for silver its own large silver circulation and replace by the large masses of freshly produced gold the outflowing streams of silver, it counteracted the influences which were changing the ratio to the disadvantage of gold and in favour of silver.

Whereas the share of gold (by weight) in the aggregate production of the two metals rose from about 3 per cent. to more than 18 per cent., the price of silver in London rose, at the period of the greatest tension, from $58\frac{1}{2}$ d. to $62\frac{3}{4}$ d., *i.e.* the gold price of silver rose by only 7.3 per cent.

This effect is not, however, one which the double standard system, as such, exercises under all conditions. On the contrary, this counterbalancing action was due to certain quite definite conditions. In the first place, France, at the time when conditions on the market of the precious metals began to change, had accumulated a large amount of silver in circulation which it could exchange for the fresh supplies of gold and was able to do so in view of the greater demand for silver. If, however, in the place of a higher gold output, and an increased demand for silver, a similar rise had occurred in the production of silver and in the demand for gold, then the French double standard system, filled to the utmost with silver and poor in gold, would have been quite unable to exercise any influence over the effects of these circumstances upon the ratio of value of the two metals. It was also due to the fact that the transition from a silver to a gold circulation suited the interests of French commerce, and, for that reason, France could afford to exchange silver for gold without compunction. Where the automatic effects of the double standard were contrary to the interests of commerce, regard for their counterbalancing or equalising action on the ratio of value subsisting between the precious metals nowhere deterred the legislature from abolishing the double standard. Thus in England in the year 1798, when the double standard threatened to substitute a silver for a gold circulation, the double standard was abolished by the suspension of the coinage of silver. At a later date in France, when a fresh set-back in the price of silver occurred, and the operation of the double standard threatened to stifle the newly established gold circulation, similar action was taken.

By about the middle of the nineteenth century the general economic development had to a very large extent prepared the ground for a gold currency on the European Continent. This is especially shown by the fact that not only in France, where gold was easily introduced on account of the double standard, was there an extensive gold circulation, but that it was also the case in countries whose currency organisation made no definite provision for gold.

The new French gold coins now invaded those countries which had adopted the franc unit based on a silver standard pure and simple, namely, Belgium, Switzerland, and Italy. Everywhere a friendly spirit was evinced by the commercial world towards gold, and far from demanding regulations against the gold currency which threatened the national monetary system, public opinion asked for, and everywhere obtained, the statutory admission of gold. In Germany, too, the circulation of foreign gold coins, especially of French 20-franc pieces, increased very

strongly at the time, notwithstanding the solemn proclamation of the silver standard by the Currency Convention of 1857.

These factors, which were an antidote to the extensive increase in gold production, were frequently overlooked in the first years after the discovery of Californian gold. Although commerce willingly accepted the new gold everywhere, there were many who regarded this upheaval with considerable misgiving. The French economist, Michel Chevalier,¹ prophesied a considerable depreciation of gold as an unavoidable consequence of the gold discoveries, and advised the abolition of the metal thus threatened, and a return to a silver standard pure and simple. Even in England voices were heard in support of this view. Few already recognised in those days that the increased gold output would lead to a more widespread employment of gold for coinage purposes, one better adapted to the circumstances of modern trade, and the wider use of which would of itself counteract any tendency towards depreciation. The first to voice this opinion was the German, Adolph Soetbeer, who gave expression to it as far back as the fifties.

The subsequent course of events confirmed Soetbeer's view. No one seriously thought of closing the door to the incursion of gold, as England had done towards the end of the eighteenth century in regard to silver. A gold circulation, as compared with the heavy and inconvenient silver currency, was everywhere recognised as desirable, and it is this fact, not the formal mechanism of the French double standard, which is the real reason why the value of gold and silver did not diverge to a greater extent as a consequence of changed conditions of production.

In its relation to other economic goods gold suffered, by its tremendous rise in production, a certain amount of depreciation in value, which continued until the year 1873. The prices of most goods showed in those days a substantial rise, notwithstanding improved and cheaper methods of production and transport brought about by technical progress. The statistics published by the London *Economist* give the average index number of the prices of twenty-two important commodities from 1845-1850 to 1873 as having risen from 100 to 134. But in view of its connection with the fate of gold, the purchasing power of silver fell at the same time roughly to the same extent. This is seen from the fact that not only did the prices of commodities rise in London, where they were reckoned in gold currency, but from similar phenomena in countries on a silver standard. According to calculations made by Soetbeer on the basis of Hamburg prices, the index number, which was 100 for the years 1847-1850, rose to 127.75 in the year 1871, the last year of the German silver standard.

¹ *De la baisse probable d'or* (1859), translated into English by Cobden, *On the Probable Fall of the Value of Gold*, Manchester, 1859.

The increased production of gold already influenced at the time not only the value of gold as such, but also the value of silver, for which such a strong demand came from India. Gold represented a welcome substitute for silver in European countries, and thus made large quantities of silver available for India.

¶ 5. Steps taken by Countries on a Bimetallic Standard for the Upkeep of a sufficient Silver Circulation

But the progress which the substitution of a gold for a silver currency brought in its train was not altogether free from certain unpleasant effects of a subsidiary nature. Wherever the double standard provided a legal basis for the incursion of gold, silver was driven out of circulation to such an extent that a serious lack of silver coins for everyday transactions soon occurred. This showed itself first of all, as has already been stated, in the U.S.A., whose double standard overvalued gold even more than did that of France. Similar evils made their appearance in France and in the other countries on the franc basis. On both sides of the Atlantic it became necessary to take steps to keep up the circulation of silver to an extent sufficient for small payments.

The U.S.A. were the first to undertake an amendment of their currency legislation. The lines on which England's monetary system was organised showed the way. By a law passed on the 21st of February 1853, silver coins from the half-dollar downwards were converted into token money. Their fineness was reduced so far that it corresponded to a ratio between gold and silver of 1 : 14.88. The government took over their coinage, and they became legal tender only for amounts up to five dollars. The double standard system was, however, only modified by these steps; it was not completely abandoned. The one-dollar piece remained formally the "standard dollar," a full legal tender coin, with unlimited coinage. In actual practice, only a very small use was made of the right of free coinage of silver. During the whole period 1834-1873 only some 8 million dollars in all were struck in the form of silver one-dollar pieces, and even this small quantity was employed almost exclusively for trade with eastern Asia.

In the early sixties the "franc" countries found it necessary to take similar steps. In the year 1851 the French government had set up a Commission to investigate the currency question in the light of the changed circumstances of production. The Commission produced no useful result. A second Commission, appointed in 1857, could only make the unacceptable suggestion that the export of silver should be restricted, either by a high tariff or by prohibition. Practical steps were taken in France only after the other "franc" countries had given an impetus thereto.

The first step for the maintenance of the silver coinage indispensable to retail trade was taken by Switzerland. That country, in the year 1860, began to coin its small silver currency as token money with a content below its face value. The weight was indeed the same as heretofore, but the fineness was reduced from $\frac{9}{10}$ ths to $\frac{8}{10}$ ths. Italy followed this example, and reduced the fineness of all its silver coins from the 2-franc piece downwards to 835 per mille. Finally France, too, began to coin its 50- and 20-centime pieces with a fineness of 835 per mille.

These steps led to negotiations between the various "franc" countries, which already had to a large extent a common currency. The result was the so-called Latin Union, created by the Convention of Paris, of the 23rd of December 1865, which comprised France, Belgium, Switzerland, and Italy. The currency system as such remained unaltered in this Convention. Each separate State secured the privilege of its coins being accepted by the Treasuries of all the other States. For the silver money, it was decided to coin the pieces from 2 francs downwards as token money with a fineness of 835 per mille, exclusively for account of the participating States, and in quantities not exceeding 6 francs per head of the population. The legal tender quality of these token coins was restricted to 50 francs.

The silver 5-franc piece, the so-called 5-franc taler, was retained—just as was the standard dollar in America—as a coin with full legal tender and free coinage. The legal double standard remained, even though the coinage of 5-franc pieces fell to almost infinitesimal dimensions.

Belgium, Switzerland, and Italy had demanded, at the negotiations which led to the Convention, the immediate adoption of a gold standard, but in France influential circles in the financial world and the Bank of France worked hard for the retention of the double standard, and the French government accordingly placed itself in opposition to the other States of the Union.

For the U.S.A., as well as for the countries of the Latin Union, satisfactory results accrued from the double standard with silver token coins so long as the ratio of value between the precious metals did not in practice allow the right of free coinage of silver, which was still formally in force, to be exercised. Under such conditions the system had all the advantages of a gold standard pure and simple. It provided a predominant gold circulation and a silver circulation sufficient for the small transactions of everyday life.

A change in the ratio of value in favour of gold would necessarily alter the position. As soon as silver again fell below the value assigned to it, and the coinage of silver again began to be

profitable, the countries with a modified double standard were faced with the same question which faced England at the end of the eighteenth century, a problem which that country solved without further ado by the abolition of the double standard, viz. whether silver should be allowed to supplant gold in its predominant position in the circulation.

But this question, really of decisive importance, was for the time being hypothetical. Before it became of practical importance, circumstances intervened which strongly influenced and accelerated its final solution. In the meantime, interest was devoted to the problem which the conclusion of the Latin Union Convention had changed from a theoretical question to one seemingly of practical politics—the idea of a world unit of currency.

¶ 6. World Currency Union and an International Standard

The idea of a universal world unit of currency is nearly as old as the difference between the currency institutions of the different countries.

Certain quite obvious advantages, such as doing away with the necessity of exchange and of recalculation, the ideal of the unification of the whole of humanity in connection with an important institution, have at all times won it adherents. The conception of a world union for currency matters must have proved particularly attractive at the time when humanity was stirred by new and great influences due to the tremendous progress which had resulted from the greasing of the wheels of international commerce. The successes of modern science in conquering space, and in thus substantially diminishing the natural difficulties of intercourse between nations, led men to strive to overcome the artificial handicaps also. With the active co-operation of Napoleon III, the old policy of seclusion was given up in trade agreements with England, with the countries within the German Customs Union, and with other countries. The abolition of customs barriers encouraged international trade, and it was desired to encourage it still further by the introduction of a universal system of weights and measures, and by the establishment of a world unit of currency. In point of fact, the French succeeded in obtaining for their metric system of weights and measures an almost universal acceptance. In currency questions, however, these cosmopolitan endeavours came up against great difficulties.

The most ardent supporter of the idea of a World Union in the French government was de Parieu,¹ Vice-President (and later President) of the Chamber of Deputies. He regarded the Latin

¹ [Esquirou de Parieu (1815–1893), was the originator of the Latin Union and the leading spirit at the International Conference of 1867.]

Union as the first step towards the establishment of the World Union. This idea was brought into the text of the Latin Union Convention. Article 12 thereof reads as follows :—

“The right of entry into the Union is reserved for every State which will undertake to be bound by its provisions and will introduce the currency system of the Union in regard to gold and silver coins.”

Furthermore, immediately after the signature of the Convention, France transmitted a copy to the government of each of the more important States with an invitation that they should join it.

The results of the French endeavour did not correspond to the enthusiastic reception which had been accorded to the conclusions of the Latin Union by cosmopolitan public opinion in most civilised countries. Only Greece joined the Union formally. The Papal States, Spain, and Rumania adopted the franc system by way of autonomous legislation without joining the Union. In all other countries the invitation of France was received with hesitation. Their scruples were to some extent due to the fact that the currency systems of such countries had become established institutions. In particular, the fact that the Latin Union was based on the double standard caused foreign governments almost generally to hesitate, and it became clear that a condition precedent to the setting up of a World Union was the satisfactory solution of the question of a standard.

The French government sought to overcome these difficulties by arranging, in connection with the Paris Exhibition of 1867, for an international exchange of views on the question of a world unit of coinage. At the international currency conference thus summoned, nineteen European governments were officially represented, as well as the U.S. of America. The conference was, indeed, in the nature of an informal discussion. It was to take no decisions of practical importance, but to offer a basis for further diplomatic negotiations. Nevertheless, its proceedings gave an interesting and important insight into the position taken up by the several governments in currency matters, into their views on the currency situation in general, and in particular into their views regarding the question of the standard.

As far as a world unit of currency was concerned, only decisions of a general nature were taken. It was recommended that countries which had not yet accepted the French system should, on the occasion of any future reforms, adopt the gold 5-franc piece as a *dénominateur commun*—that is, adopt a unit of account which would stand in some simple relation to this coin. But the most important States, especially England,¹ the German

¹ A Royal Commission reported against the assimilation of the sovereign to the 25-franc piece.

States, and Holland, immediately made far-reaching reservations by declaring that they could not see any certain prospect of their being able to join in an international currency system, as they already had a well-trying system which suited the habits of their nationals.

Whilst this difficulty prevented any advance in the matter of an international currency system, almost complete unanimity was reached in regard to the question of a standard. Extensive discussion took place on the question of which standard should be adopted as the basis of a world unit of coinage, and it was unanimously decided (only the Netherlands voting against it), that neither the silver, nor yet the double standard, but only the gold standard, pure and simple, deserved consideration.

This conclusion showed the almost unanimous opinion of the governments represented at the conference that the gold standard was the standard of the future. The negotiations preceding this decision left no doubt that States already in possession of a gold standard would not depart from it under any circumstances, and that, further, the countries which envisaged the reform of their currency would adopt the gold standard as the basis of any future monetary system. The English government subsequently declared in the clearest terms that it would most certainly keep to its gold standard and that any possibility of its ever joining in any agreement with a country on a double standard was quite out of the question. Belgium, Switzerland, and Italy, who had demanded the gold standard as a basis even before the establishment of the Latin Union, held to the same opinion as before. Austria had already in the year 1854, at the beginning of the negotiations in connection with the Vienna Currency Convention, demanded the transition to a gold standard. Its representative at the Paris Conference urged the same view, and concluded, a few days after the conference, a preliminary convention with France with a view to the entry of Austria into the Union, and this preliminary conference was made conditional upon the definite transition of both contracting parties to a gold standard. The U.S.A., which, as Austria, then had a paper currency, showed a willingness to reorganise their monetary system on a basis of a gold standard. Before the Civil War, which had necessitated the issue of an inconvertible paper currency, gold had been practically the sole medium of payment, and the fact that the double standard was still formally in existence had been practically forgotten. That this was so might be seen, even during the period of the paper currency, from the fact that customs duties were payable in gold and that interest on the national debt was also paid in gold. The representative of the U.S.A. at the Paris Conference expressed

himself in regard to the double standard in the following terms:—

“The legislature of the U.S.A. as well as the nation have, by experience, if not from a study of the question, learned sufficiently that the system of a double standard is not only unwise but impossible.”

A little more reserve, but combined with an expression of full recognition of the advantages of the gold standard, marked the attitude of the German representatives and of those of the Scandinavian States. The Prussian delegate declared that he did not know when and how a transition from a silver to a gold standard could take place in Prussia, and the representatives of Scandinavia stated that a transition of their countries to the gold standard was dependent upon the attitude of Germany, with which country their trade policy was chiefly associated.

The Netherlands alone showed unwillingness in principle to go over to the gold standard. The Dutch representative agreed that the double standard was theoretically the most perfect organisation of currency, but he nevertheless voted for the double standard on condition only that a universal currency union based on it was brought into being. He did not think that an isolated double standard was a feasible proposition. The Conference made it clear, however, that there was no prospect whatever of any universal adoption of the double standard.

This important international exchange of views on the question of a standard is a permanent record of the tendencies of that time, which were fully in favour of the gold standard. Attempts were subsequently made to minimise the importance of this exchange of views. It was asserted that the Paris Conference had not decided in favour of the gold standard, but only in favour of arriving at a universal unit of currency based on a gold standard,¹ and that only when there appeared to be no prospect of any unanimity did the Paris Conference vote in favour of the gold standard. It cannot, therefore, so it was asserted, be concluded from this decision that, at that time, the tide flowed strongly in favour of the gold standard.

This line of argument altogether ignores the course taken by the negotiations before the decision was arrived at. These negotiations show clearly that the representatives of the individual States did not regard the gold standard simply as a means to the end of a universal union, but as the best and most perfect system of currency. They were in fact willing, quite irrespective of any question of the possible establishment of a universal union, to preserve the gold standard wherever it was in existence,

¹ Cf. Documents Nos. 14 and 20 of the German Silver Commission of 1894.

and to consider its introduction where it had not yet been established. The argument also overlooks the fact that the gold standard could not, by its very nature, be simply a means for the establishment of a universal union, a means which would lose significance as soon as the prospect of any such union vanished. The more important advantages which would flow from a universal currency union would in fact result from the mere adoption of a uniform standard, and there was, therefore, no reason to give up the idea of a uniform standard because the proposal for an international unit came to nothing. The vote of the Paris Conference, that currency unity could only be attained on the basis of the gold standard, meant at the same time that uniformity in the standard of civilised countries could only be brought about on the basis of gold.

A rapid glance at the lines of development in the succeeding decades shows that subsequent events proved the correctness of this view. In the last few decades before the Great War nothing contributed so much to the extension of the gold standard as the fact that the trade and financial interests of nations were becoming more and more closely knit together, and that this state of affairs imperatively demanded a uniform standard.

Taking them all in all, the Paris negotiations bear witness to the great changes brought about within a short space of time by the discoveries of gold, not only in the actual gold circulation of the civilised world, but also in currency policy. From the year 1847, when gold was demonetised in the Netherlands, a demonetisation which to some extent put a seal on the belief in the silver standard, up to the time when in 1867 the Paris Conference proclaimed the gold standard as the system of the future, only a short span of two decades elapsed! The increase in the circulation of gold in extensive areas, and the change in the views regarding the question of a standard, had prepared the ground for a new era in currency legislation. The purpose of such legislation was to preserve permanently the circulation of gold wherever it existed and wherever it was not sufficiently secured by the establishment of a statutory gold standard, and also to secure to gold currency an entry wherever, on account of existing currency institutions, it had not yet found such an entry.

Only the necessary push was required for the stone to begin rolling.

As things were in the second half of the sixties, it was to be expected that this push would come from France. France had taken the lead in questions relating to currency politics. Her ambition to bring about a universal currency union under French hegemony was bound to push her further. This ambition could only be satisfied in the direction of a gold standard, for, after the

views expressed at the Paris Conference, the gold standard was the condition precedent to a universal currency union.

As soon, however, as France gave up its double standard and accepted the gold standard, the question of a standard was practically solved for European countries. It was certain that Switzerland, Belgium, and Italy would express their absolute adherence to such a step. As against these States, as against England and her most important Colonies, and as against the fact that international trade was based exclusively on gold—Germany, Holland, and the Scandinavian countries, with their silver standard, would have found themselves in an isolated position in currency matters.

It was fortunate for Germany that she was not placed in this dilemma, and that the supporters of the double standard in France were sufficiently strong to delay definite action being taken by that country. As late as March 1867, a few months before the International Conference, a Commission had voted by a majority of five to three for the retention of the double standard. In the year 1867 a new Currency Commission was appointed. It made a much more thorough investigation and took the evidence of Chambers of Commerce, of tax-collectors, and of the Bank of France. The latter still insisted upon the double standard, but of 66 chambers of commerce there were 45 in favour of a gold standard, and of 91 tax-collectors 69 held the same view. The Commission ultimately voted by 17 votes out of 23 in favour of the abolition of the silver standard and recommended that, at the very least, steps should be taken immediately to suspend or to restrict the coinage of the silver 5-franc pieces and to limit their legal tender to amounts up to 100 francs.

The Finance Minister, Magne, who was in favour of the double standard, did not, however, accept the recommendations of this Commission, but succeeded in getting the question referred back for reconsideration by a new tribunal, namely, by the Conseil Supérieur du Commerce, de l'Agriculture et de l'Industrie. This Council began its investigations in November 1867, and finished its labours only in July 1870, after the outbreak of the war with Germany. It took the evidence of a large number of experts from all countries and of all parties, and gave its final vote, by a large majority, in favour of the gold standard.

But the time for French initiative in the sphere of monetary systems had passed. The war made it impossible for any definite steps to be taken, and it resulted in a radical change of conditions, by which the leadership in currency matters was transferred from France to Germany.¹

¹ [See also H. B. Russell, *International Monetary Conferences* (New York, 1898).]

CHAPTER V

GERMAN CURRENCY REFORMS

¶ 1. The Condition of German Currency before the Reforms

THE reform of the German currency is of such enormous importance in the sphere of modern currency matters that we are justified, if only on this account, in examining it in detail at this stage.

The circumstances which led to efforts to reform the German currency had, to be sure, but little to do with international developments, but were of a purely national nature. The evils in the German system, which were of old standing, evils which were the subject of most of the complaints, were caused by the multiplicity of the various territorial systems of coinage, as well as by the variety and the debased condition of the individual types of coin. These again were in part the remnants of currency systems which had long ago been abolished.

At the time of the reform of the currency there still existed in Germany six different systems of currency:—that based on the taler in the greater part of North and Central Germany; the gulden standard in South Germany and in some of the Central German States; the franc standard in the newly conquered territories; the Lübeck standard in the free cities of Hamburg and Lübeck; the bank currency based on fine silver employed by Hamburg merchants; and the taler gold standard of Bremen. The taler currency was itself divided into various systems:—the Prussian, which divided the taler into 30 silver groschen of 12 pfennigs; the Saxon, and that of some of the Central German States, in which the groschen was divided into only 10 pfennigs; and the Mecklenburg system, in which the taler contained 48 schillings.

Even worse than the multiplicity of these different types was the chaos existing in the circulation. When a new system of coinage was being introduced no attention was usually paid to the withdrawal from circulation of the coins on the old standard, and accordingly the many German systems of coinage of the previous 150 years or so had left their products in the German circulation. To this must be added the paper currencies of twenty-one German States and the notes of thirty-one German banks, quite apart from numerous examples of the metallic and paper currencies of foreign countries to be found in the circulation.

The worst conditions in this respect obtained in South-West Germany. There the currency muddle can hardly be more clearly described than was done in a document which Ludwig Bamberger¹

¹ [Bamberger (1823–1899) was the leading authority in the Reichstag on matters of finance and economics. It was in the main due to him that Germany adopted the gold currency and that the German Imperial Bank took its actual form.]

placed before the Customs Parliament (Zollparlament) on the 5th May 1870, on the occasion of a speech delivered on the question of the necessity of unifying the German currency. He said:

"I have here a so-called 'bordereau,' namely, a table setting forth specifically the types of money which a trader enclosed with a draft to his bankers. The 'bordereau' is dated the 19th December 1869. It relates to a sum of 15,834 gulden. I have extracted it from the correspondence of a bank. It contains the coins of which these 15,834 gulden were composed, and in order that you might understand its true meaning, I must add that the draft came from a small town in the province of Rhenish Hessen. The town is small, 3000 to 4000 inhabitants, and has but a single inn—not sufficiently attractive to be frequented by strangers. It is a payment composed of receipts from rents, purchase agreements, and from sales of wheat, barley, fruit, and similar products, brought from the various surrounding villages into this small town to be sold through the agency of a merchant. What was thus collected from the pockets of the peasants is as follows:—The sum of 15,834 gulden consisted of double talers, crown talers, pieces of $2\frac{1}{2}$ gulden, of 2 gulden, 1 gulden, $\frac{1}{2}$ gulden, $\frac{1}{3}$ rd, $\frac{1}{6}$ th, and $\frac{1}{12}$ th Imperial talers, 5-franc pieces, 2-franc pieces, 1-franc pieces, then we have gold coins such as pistoles, double and single Friedrichsdor, half-sovereigns, Russian Imperials, dollars, Napoleons, Dutch Wilhelmsdor, Austrian and Württemberg ducats, Hessian 10-gulden pieces, and last of all a piece of Danish gold."

Obviously the most urgent need existed for establishing some sort of order in the currency in circulation, and this was the object towards which the first efforts for reform were directed. But although it was universally and unanimously recognised that an evil existed which called for cure, there was not much of that joint collaboration which was necessary to bring about so far-reaching a reform. The individual German States and princelings watched anxiously over their sovereign rights, and it was in currency matters that they saw the most important embodiment of these. They desired to give up none of these rights. Uniformity in currency was thus rendered impossible until the Empire was established. All that could be done was to conclude currency agreements between the States belonging to the Customs Union. These agreements established a certain degree of uniformity in the principles on which coins were to be struck, and made the taler and the double taler the standard coins of the Union with a legal tender power throughout the area covered by the Union. In the year 1837 the South German States had already combined in a Currency Union, which regulated the gulden currency. In

1838 there followed a currency agreement, signed in Dresden by all the States of the Customs Union. The most important of the agreements of this nature was the Vienna Convention of the 24th January 1857, in which Austria was also included. As, however, Austria could not get rid of its paper currency, the Currency Union was only effective in that State in so far as a number of the Union talers of full legal tender throughout the area of the Union were also coined in Austria. After the war of 1866 Austria left the Union.

In addition to the multiplicity of coins, another evil in the German system was the insufficiency of, and lack of order in, the gold currency in circulation. This was an evil rooted in the nature of the German currency organism, even more noticeable as the country developed economically and the wealth of the population increased. The lack of gold coinage favoured, as silver coins were inconvenient for larger payments, the employment to a very large extent of paper tokens. The smaller German States in particular took advantage of these conditions and threw into circulation large quantities of paper money, mostly in notes of very small denomination, even down to one taler, for the convertibility of which either no provision whatever, or only quite insufficient provision, was made. Most of the note-issuing banks, which sought to earn as large profits as possible by the issue of notes without cover, behaved similarly.

As the public could scarcely be expected to carry about large quantities of the troublesome silver, it seemed that the only possibility of reducing the dangerous proportions assumed by the masses of paper tokens in circulation was to create a gold currency sufficient in quantity to meet the needs of the advance in commerce.

International currency developments tended in the same direction. The use of gold currency was on the increase everywhere. As had already become apparent at the Paris Conference of 1867, increasing efforts were being made everywhere to establish firmly, by statutory enactments, the gold circulation already in existence, and where it was not already in existence and could not obtain a footing because of existing laws, to introduce it by establishing a gold standard. It became ever clearer that, if Germany retained her silver standard, she would ultimately become isolated in currency matters.

Both for reasons of her own internal circulation, therefore, as well as on account of the international course of events, Germany found herself under the pressing necessity, not only of introducing unity into her coinage, but of regarding it as her most important task to establish a gold circulation.

¶ 2. Efforts towards Reform

The demand for a German unit of coinage, a demand nearly as old as the German currency chaos, had by no means been satisfied by the results achieved by the Currency Unions before the creation of the Empire. Although great progress had been made, especially by the Vienna Convention of 1857, which laid down far-reaching provisions in regard to token coins, and raised the taler to the position of a standard coin within the Union, within the area of the Customs Union itself there still existed two separate standards—that based on the taler and the South German standard of the gulden. Indeed, within the Currency Union (including Austria) there were even three different territorial standards. To this must be added that the coins of the Union only, irrespective of the mints from which they emanated, were legal tender throughout the area of the Union. The privilege of being unconditional full legal tender was indeed assigned to them in so definite a manner that they appeared certain to gain predominance over the actual territorial currencies, quite apart from the fact that they were identical with the most important coins current in the most important parts of the area covered by the Union. Contracts of payment, expressed in terms of territorial currencies, were, under Article 8 of the Vienna Convention, to be fulfilled, if so desired, in the currency of the Union. Contracts, however, expressed in terms of the coinage of the Union, could only be fulfilled in such coin. On the other hand, the individual States had expressly refused, during the negotiations preceding the Convention, to undertake even the obligation of not prohibiting the circulation in their area of the coins of the other signatory States. But the importance of the currencies of the individual States, as compared with that of the coinage of the Union, had since 1857 already been greatly reduced by the declaration of the 1-taler coin as a standard coin of the Union—side by side with the double taler, which had already been raised to the same position by the Convention of 1838—and by the privileges conceded by law to the standard coins of the Union. The figures of the numbers of coins struck are a striking proof of this. From 1838 to 1857 only a little more than 50 million talers were struck in the area of the Customs Union in the form of Union coins (double talers). At the same time, no less than 80 million talers were struck in the form of coins of the South German currency. On the other hand, during the period 1857–1871 there were coined in the States of the Customs Union 229 million talers in the form of Union currency (1- and 2-taler pieces), whilst, at the same time, the coins struck in the form of territorial currencies, on the taler and South German gulden standards, amounted to only $6\frac{1}{3}$ million talers,

of which 2 million were in taler coins ($\frac{1}{3}$ - and $\frac{1}{6}$ -taler pieces), and $4\frac{1}{3}$ million were in gulden coins. The South German gulden standard, which had been preserved by the Vienna Convention, was thus on the point of being throttled by the coins of the Union. Of the total coins of the gulden States themselves, coined during the period from the Vienna Convention to the German currency reform, only some 8.4 per cent. were in the form of the territorial coins and 91.6 per cent. in the form of the coins of the Union.

Even though this line of development, an inevitable consequence of economic forces, was gradually bringing nearer the prospects of complete co-ordination of the German circulation, it was but small comfort for those who suffered daily from the evils of the chaotic state of things. The Vienna Convention was a half-baked affair and had whetted the public appetite for a complete solution of the question of unifying the German currency.

The public demand for unification was supplemented from the fifties onwards by the efforts to establish a gold standard. The technical advantages of a gold standard had already in the thirties of the nineteenth century found a well-informed and eager protagonist in the person of the able economist J. G. Hoffman.¹ In those days, however, opinions of this kind were, in view of the circumstances then surrounding the production of the precious metals, of but theoretical importance. However great would have been the justification on technical grounds for a transition to a gold standard, one essential condition for it was lacking—a sufficient supply of gold. Only when in 1848 the production of the precious metals underwent such a radical change was the road clear for the introduction of a gold standard, even more necessitated by the general economic advance. The form which international currencies were taking and the internal needs of the country, which in the absence of a convenient circulating medium was threatened by a flood of paper money, were factors indicating that German currency reform had not only to be directed towards bringing unity in the coinage, but it had also to undertake the important task of securing a sufficient and well-ordered gold circulation. Public opinion was not, however, clear as to how to achieve this latter result. The first German Trade Congress, which met in 1861 in Heidelberg to consider the question of the currency, held unification to be the most pressing need and considered that efforts to bring it about should not be compli-

¹ Of his works the following must be specially considered in this connection: *Drei Aufsätze über das Münzwesen*, Berlin, 1832; *Die Lehre vom Gelde als Anleitung zu gründlichen Urteilen über das Geldwesen*, Berlin, 1838; *Zeichen der Zeit im deutschen Münzwesen, als Zugabe zu der Lehre vom Gelde*, Berlin, 1841.

cated by questions of a standard. The third Trade Congress, which met in 1865 in Frankfort-on-the-Main, showed an important change of opinion. It was practically universally admitted that the need of a gold circulation was great, but there was still considerable difference of opinion as to the manner in which gold coins could be incorporated in the German system. On one point there was agreement. It was decided that a gold coin should be struck with a fineness corresponding to that of the 20-franc piece. This coin should have a fixed rating, or at least, if the governments could not agree to that, a rate changeable only from time to time. The proposal was to be in the nature of a *modus vivendi* pending the establishment of a gold standard.

In the following years the movement in favour of a world currency union, which emanated from France, also drew the German reformers into its orbit. The formation of the Latin Union and the splendid results of the Paris Conference of 1867 gave a special impetus to the idea of a universal world coin. At the same time the negotiations of the Paris Conference threw light upon the whole question of a standard. The effects on Germany showed themselves at the Economic Congress of 1867 and at the German Trade Congress of 1868. Both these Congresses demanded not only German unification, but also adhesion to the franc system and the transition to a gold standard. The North German Reichstag also passed a resolution in June 1868 demanding a system of currency which would "as far as possible pave the way towards a universal system comprising all civilised countries." A year later a resolution in similar terms was passed by the Customs Parliament.

It soon, however, became apparent that neither England, nor yet the U.S.A., were prepared to accept the French system. France itself hesitated to give effect to the principle, which had been accepted at the Paris Conference by its own government and by all the States (except the Netherlands), as a condition precedent to an international currency union, namely, the transition to a legal gold standard. Then came the Franco-German War. The war submerged the ideal of international fraternisation in currency matters. People began to consider the practical advantages and disadvantages of a common coinage, and came to the conclusion that the most important advantages could be gained by standards which could be equated to each other on the basis of a gold standard, whilst a common currency system, and consequently a common circulation, would have rendered it necessary for Germany to undertake tedious recalculations from the existing monetary types, and would, in addition, have caused difficulties in other respects. In particular the reports which were being spread that the French coins were not being struck with absolute

exactness, and that they did not fully observe the regulations in regard to weight, appeared to make it undesirable that Germany should make common cause with France in currency matters.

Besides, the task of unifying the German coinage and of going over at the same time to a gold standard was sufficiently difficult, and opinion was gaining ground that this task should not be made more difficult by efforts towards an international currency agreement, the prospects of which in any case appeared very slight, in view of the attitude taken up by England and America.

¶ 3. The Importance in Currency Questions of the Franco-Prussian War and of the Establishment of the German Empire

The politico-legislative conditions necessary for a currency reform embracing the whole of Germany did not come into being until the German Empire was formed. It is true that the constitution of the North German Union had already made it the task of the Union to legislate for the regulation of the coinage, paper currency and bank systems, but as long as South Germany stood outside the Union universal reform could only be brought about by the laborious method of agreements with individual South German States. Nevertheless, the Council of the Union decided in the spring of 1870 to institute an investigation into the circumstances attending the currency question, and the Customs Parliament passed a resolution requesting the governments which had entered the Union to treat the question of the reform of the coinage as a matter of common concern to all the States of the Customs Union and so to extend the scope of the proposed investigation also to the South German States.

The government of the North German Union was inclined to act in accordance with this wish, but the resolution was soon rendered obsolete by political events. The questionnaires for the investigation had already been prepared and were ready to be sent out when the war with France broke out. The consequences of this war made a radical and complete change in the conditions necessary to a reform of the German currency.

Before the war, France, as has already been shown, had completed long and exhaustive inquiries into the problem of the standard, and these tended quite definitely in favour of the gold standard. There were in those days no difficulties whatever to prevent the introduction of the gold standard in France. As in France gold coinage predominated, and merely a small quantity of silver coinage was in circulation, it only required a law repealing the free coinage of silver and restricting the legal tender quality

of the silver 5-franc pieces. In Germany, however, a mere law was not sufficient for the introduction of the gold standard. It was first necessary to withdraw from circulation most of the large quantity of silver, amounting to considerably more than 500 million talers, and to substitute gold for it. By the closing of the French mints to silver this metal would, it was generally held, suffer a certain degree of depreciation, and the more the value of silver fell in contrast with that of gold the more difficult and costly would it be for Germany to change from a silver circulation to one of gold.

The outcome of the war radically altered the situation.

France was prevented from taking the decisive step, so carefully prepared, in the matter of the standard. The Bank of France had found it necessary to suspend the convertibility of its notes. If it was the intention of the French government to return as rapidly as possible to cash payments, it could not handicap itself by ceasing to coin silver. As France was allowed to use its silver 5-franc pieces for paying the indemnity, its task would be rendered easier by coining as much silver as possible. There could, therefore, for the time being, be no question of a cessation of silver coinage in France and a transition to a gold standard.

The conditions brought about by the war for Germany were entirely different.

The establishment of the Empire removed the last existing handicap in the way of a thorough-going reform of the currency. The war indemnity solved the question of how Germany was to obtain the gold necessary for a gold standard. The five milliard marks, in so far as they were not paid in actual gold, but in bills, bank-drafts, etc., provided sufficient means for the purchase in foreign markets of gold for coinage purposes.

The moment seemed to be exceptionally favourable for Germany, and was taken advantage of with energy and ability. The investigations which had been resolved upon in the year 1870 were not pursued, as the government of the Reich now declared the question of the currency to have been sufficiently elucidated and considered that time was too valuable to be wasted on a new inquiry. In point of fact, such an inquiry was superfluous, after the public discussions upon currency reform which had taken place for years. The almost identical resolutions of the free Commission of members of the Reichstag which met in June 1871, and of the Economic Congress which met in August 1871 in Lübeck, could rightly be regarded as an expression of almost universal public opinion. These resolutions demanded the introduction of a uniform system of coinage, with a decimal subdivision, based on the gold standard and derived from the taler standard.

¶ 4. The Suspension of the Coinage of Silver by Prussia

But before the legislature of the new Empire could deal with currency a most important step had been taken by the Prussian government. The French indemnity payments caused a strong demand on all international money markets for German currencies. Large amounts of silver were sent to Germany for the satisfaction of payments due and were delivered to the German mints for coinage. The German States had, indeed, a silver standard, but the free coinage of silver had not been established by law. Free coinage did in effect take place, but only in the form that the German mints bought the silver offered to them at a price which was made public, was changeable only within narrow limits, and stood but a little below the mint price of the metal. In the second quarter of 1871, England alone exported nearly 2 million pounds sterling of silver to Germany, and a steady and copious stream of silver flowed to the German mints for coinage, notwithstanding that the purchase price had been reduced and that this amounted to an increase in the seigniorage. The strong flow of silver in those days is to be explained by the fact that by reason of the indemnity which France was required to pay, Germany became, in a sense, a creditor of the whole world. On all markets currencies were sought for on French account for the requisite payments to Germany. In particular, the London banks issued drafts on Germany and sought to find cover for these by sending precious metals to Germany. As Germany at that time still had a silver standard, silver became by far the more important metal for this purpose, especially as in any case, by reason of increased production and the diminishing Indian demand, silver was becoming available in large quantities on the London market.

This great flow of silver was naturally very inconvenient to the German government at a time when it was considering plans for establishing a gold circulation. It is true that no decision had yet been arrived at as to whether the gold circulation should be based on the gold standard pure and simple, or on the double standard. On the contrary, the government of the Reich wished expressly to leave this question open pending definite currency legislation. But the incontrovertible logic of events spoke clearly enough. If it was really desired to set up a considerable circulation of gold, then steps had to be taken to prevent further swelling of the silver circulation.

The Berlin mint reduced the purchase price of silver to 29 taler 23 sgr. (the standard being 30 taler to 1 pound of fine silver), but it did not succeed in stopping the flood. The Prussian government, therefore, took the step of ceasing to coin silver altogether.

As from the 3rd July 1871 the Berlin mint no longer bought silver from private persons.

As the Berlin mint far surpassed in importance all other German mints, this step amounted in practice to a suspension of the free coinage of silver, and the final decision in the question whether a double or a gold standard should be adopted was thus prejudiced by the pressure of events. By this step, which was in the nature of a defensive measure, the principle was in effect recognised—the principle denied by the double standard—that the creation and upkeep of a gold circulation and the unlimited coinage of silver are irreconcilable.

¶ 5. Reform Legislation

In October 1871 the draft of a bill was placed before the Bundesrat (Federal Council), which dealt with the minting of gold coins for the Empire. As appears from its title, this draft did not aim at a final regulation of the German monetary system, but only at the immediate creation of a gold coinage for the Reich. These coins were indeed intended to be the basis of a future universal German system, but were only provisionally incorporated in the existing currency organisation. The Reichstag amended this law in a way which very greatly widened its scope. Provisions were introduced which had the effect of prejudging important questions which had been reserved for decision in connection with general currency legislation.

Notwithstanding great difficulties and differences of opinion on points of detail, especially as to how far the State could regulate the German currency system, it was possible to promulgate the law relating to the minting of Reich gold coins as early as the 4th December 1871.

This Act made the mark, which was divided into 100 pfennigs, the unit of account of the whole currency system. The mark was given a value of $\frac{1}{3}$ rd of a taler, and its value in the units of coinage of the other German territorial currencies was based on its relation to the taler. The mark itself was defined as being $\frac{1}{10}$ th of an Imperial gold coin, of which $139\frac{1}{2}$ were to be produced from a pound weight of fine gold. In addition to the 10-mark piece, a 20-mark piece with a fineness of $1/67\frac{3}{4}$ of a pound weight of fine gold was created. Other coins of this new system were not yet ordered to be struck.

The mere creation of a coin for the Reich made it necessary, even though the law was regarded as provisional, to put into force a number of other regulations.

As the Reich was a federation of States, the question immediately arose as to who should coin these Reich coins. Should it

be the Reich or the individual States, and what device should be impressed upon the Reich coin? The trend of public opinion was strongly in favour of making the Reich the sole and supreme authority in all future questions relating to currency systems, and of regarding all questions arising from administration, coinage, withdrawals, etc., as matters solely for the Reich. The governments of the individual States, however, the "particularists" in the whole Reich, desired that the actual coinage and all rights and privileges arising therefrom, should be left to the individual States, and that the Reich should retain only the express privilege of legislating upon currency. Even in the Bundesrat a compromise had to be made between these two claims. The compromise inclined more to the "particularist" claim. The Reichstag, however, struck out the most important provisions of a "particularist" character, and decided the questions regarding the regulation of the currency system substantially in a unitarian sense, although certain formal concessions were made.

In accordance with the provisions of the Act of the 4th December 1871, subsequently amplified for all coins of the Reich by the law of 1873, the Reich does not itself exercise the right of coinage. On the contrary, the Reich coins are struck at the mints of those Federal States which have declared themselves prepared to undertake this task. But the coinage is at the cost and the order of the Reich, which also determines the amounts to be coined. The Chancellor, with the assent of the Bundesrat, supplies the mints with the metal for coining the quantities which fall to the share of each. Even the process to be adopted in coining is laid down by the Bundesrat, and is subject to supervision by the Reich. The right of coinage which had thus been reserved for the individual States loses, therefore, all real importance. It amounts in effect to nothing more than carrying out of orders issued by the Reich.

A formal concession was also made to the individual States in deciding the device to be impressed upon the Reich coins. The Reich gold coins were to bear on the one side the Imperial Eagle, with the inscription "Deutsches Reich," and on the other side the effigy of the territorial ruler, or the crest of the free city as the case might be, with a relevant inscription. An attempt was made in the Reichstag to take away from the territorial rulers the right of having their effigy placed on the coins of the Reich, and to allow only the effigy of the Kaiser. But no less important a person than Prince Bismarck strongly urged that "this kind of pressure upon the individual States was politically in the highest degree inadvisable."

The draft of the Bill as it left the Bundesrat allotted to the individual States all matters relating to the upkeep at their

full weight of coins in circulation, the withdrawal of Reich coins, as well as the withdrawal of the territorial coins necessary to make the reform effective. The Reichstag, however, struck out these provisions and transferred these duties to the central authority, rightly recognising that they were essential to the new universal monetary system which was to be created.

The fineness of the Reich's gold coins, introduced by the law of the 4th September 1871, was fixed by taking the ratio of value between gold and silver as 1 : 15.5. As the taler contained, in accordance with its statutory fineness, $\frac{1}{30}$ th of a lb. weight of silver, and a mark, being $\frac{1}{3}$ rd of a taler, $\frac{1}{90}$ th of a lb. weight of silver, it follows that a 10-mark piece had a fineness

of $10 \times \frac{1}{90 \times 15.5} = \frac{1}{139.5}$ of a lb. weight of gold. The ratio of

1 : 15.5 was chosen because it corresponded more or less to the average ratio from the beginning of the eighteenth century; further, because it corresponded to the actual ratio on the bullion market obtaining at the time when the Act was being passed; and, finally, because it was the ratio on which the currency systems of the countries of the Latin Union were based.

The original draft of the Bill provided that the Reich's gold coins should be for the time being incorporated in the existing monetary system, not at a legal rating at a definite face value, but at a Treasury rating, which could be altered whenever necessary. The Bundesrat, however, at once substituted a legal rating for the proposed Treasury rating.

On another point the Reichstag was the first to take the initiative. The Ministry of Finance and the Bundesrat were indeed in agreement that only a gold standard could be the ultimate aim of the German currency reform, but these authorities trod only warily the road which led to this goal. Although the question had been tacitly decided, it was still desired to leave a choice between the double standard and the gold standard, and in the drafts of the Bill no provisions whatever were made regarding suspension of the free coinage of silver. On the contrary, the Bundesrat went no further than to put on record its view that the individual governments should promise each other that they would cease until further notice to coin their territorial silver currencies. The Reichstag, however, drew the correct conclusions from the recognition that the creation and upkeep of a gold circulation could not be thought of if the German silver coins went on increasing in numbers at the same time. It, therefore, inserted a paragraph in the Act which prohibited any further minting of territorial silver coins, excepting commemorative medals. This step was a final decision in favour of a gold standard as the future currency system of Germany, a decision

which in the draft of the Bill had been reserved for further legislation.

The Reichstag went further than the Bundesrat in connection with yet another point involved in the monetary system. The Bundesrat had given its decision in regard to the withdrawal of the territorial gold coins, but had inserted no provision in the Bill with regard to the withdrawal of territorial silver coins. The Reichstag amplified the provision by giving the Imperial Chancellor the power to order the withdrawal of the territorial silver coins of the various German States. This in effect gave expression to the intention to restrict the German silver circulation to the dimensions admissible in a gold standard system. Notwithstanding, therefore, its modest title, the Act of the 4th December 1871 laid in effect the foundations of the new German currency constitution.

The reform legislation was in all essential points completed by the Act of the 9th July 1873. This Act proclaimed, in its first article, formal acceptance of the gold standard pure and simple as the aim of the reform, and it regulated the organisation of this "gold standard of the Reich" in all its details.

In addition to the coinage of 20- and 10-mark pieces, which had been laid down by the Act of 4th December 1871, the Act of 1873 created a third gold coin of the Reich, the 5-mark piece (Article 2). Only a small amount (about 28 million marks) was coined in this form, and it was not long in existence. On the 1st July 1900 its withdrawal and demonetisation were ordered. The minting of gold coins for private account was allowed in principle, and regulated in Article 12 of the Act:—"Private individuals have the right to demand the coinage for their account of 20-mark pieces at those mints which have expressed their willingness to coin for account of the Reich; this coining for private account is subject to the mints not being busy in coining for the Reich.

"The charge for such coinage is to be officially fixed by the Chancellor of the Reich with the concurrence of the Bundesrat, but is not to exceed the maximum of seven marks per lb. weight of fine gold."

In accordance with this article there followed, on the 8th June 1875, an announcement by the Imperial Chancellor fixing the seigniorage at 3 marks per lb. weight of fine gold.

An important amplification was given to this free right of coinage of gold by paragraph 14 of the Bank Act of the 14th March 1875. This placed upon the Reichsbank (German Imperial Bank) the obligation of giving bank notes in exchange for gold bullion at a fixed rate of 1392 marks for a lb. weight of fine gold. The figure of 1392 marks per lb. weight of fine

gold corresponds to the mint price of a lb. weight of fine gold of 1395 marks, after deducting 3 marks for seigniorage. The Reichsbank gave notes for gold on the spot; the territorial mints, however, delivered the coin only some time after the raw metal had been delivered to them. This latter procedure entailed loss of interest, and thus led to the Reichsbank becoming the sole agency for coinage on private account.

In addition to the gold coins with free coinage and full legal tender, which constituted the basis and the bulk of the new German circulating currency, the law created a system of token coins of silver, nickel, and copper:

The silver coins, being intended as token coins only, were intentionally struck with a lesser fineness than that of the previously circulating silver coins of full legal tender. Their fineness was also less than that which would have corresponded to the ratio between silver and gold adopted as the basis of the new system. It was to be $\frac{1}{100}$ th of a lb. weight per mark (Art. 3, par. 1), whereas heretofore $\frac{1}{3}$ rd of a taler contained $\frac{1}{60}$ th of a lb. weight of fine silver. The standard of gold and silver coins gave a relation of 1 : 13.95, whereas the transition to the gold standard had been effected on the basis of a ratio of 1 : 15.5. The degree in which the silver tokens were overrated as compared with the previously circulating silver coins and the ratio adopted as the transitional basis thus appears to have been about 10 per cent.

The legal tender quality of the silver coins of the Reich was restricted to amounts of 20 marks, and that of nickel and copper coins to amounts up to 1 mark. The Imperial and State Treasuries, however, were required (Art. 9) to accept the Reich's silver coins, though not the nickel and copper coins, up to any amount.

Furthermore, the currency law created a limit for the amounts of token coins to be struck. It prescribed that the total amounts of the Reich's silver coins should not exceed, until further notice, 10 marks per head of the population of the Reich, and that nickel and copper coins should not be struck to an aggregate amount exceeding $2\frac{1}{2}$ marks per head of the population (Art. 4). In the currency regulations of the 1st June 1900 the limit for the Reich's silver coins was raised to 15 marks to correspond to the increased need for small silver currency which had arisen in the meantime. It was further increased to 20 marks per head of population of the Empire by the regulations of the 16th May 1908.

Finally, it was sought to give special support to the nominal value of these exchanging token coins by placing upon the Reich the obligation of overvalued Imperial gold coins upon demand for amounts of at least 200 marks of Reich silver coins and for amounts

of at least 50 marks in nickel and copper coins, upon these being presented at offices to be specified by the Bundesrat (Art. 9, sec. 2).

These regulations set up the currency of the future on principles in strict conformity with the gold standard pure and simple. But this new state of affairs could not be brought into being at a stroke, nor could it immediately and fully supplant the existing currency arrangements. To strike the requisite quantities of Reich coins required several years, and only in proportion as the coinage progressed and as the new coins entered into circulation could the territorial coins be withdrawn. It was the task of the currency law not only to lay down rules for the future system, but also to regulate the transition from the existing territorial systems to a Reich standard. Regulations were first made for withdrawing and demonetising the territorial coins. The duty of putting these in force devolved upon the Bundesrat. The demonetising regulations were published in the official gazettes of the several States and in the *Reichsanzeiger* (Imperial official gazette). It was further laid down that at least three months' public notice had to be given of the proposed demonetisation of any coin, and a conversion period of at least four weeks allowed (Art. 8). A definite period within which all the various territorial coins had to be withdrawn from circulation was not laid down. In so far as this was concerned it was only prescribed that with every issue of Reich silver coins a quantity of the full-weight territorial silver coins equal in amount to the nominal value of the former should be withdrawn (Art. 4, sec. 2). This regulation was not strictly observed after 1879.

Exactly how long it would take finally to withdraw the territorial silver coins, particularly the taler, could not be foreseen. At the same time, the transition from the territorial silver coinage to the new uniform order of things could not be made to depend upon the withdrawal of the very last taler. The law accordingly provided an interim transition period, called a period of the "Reich standard" in contradistinction to the "Reich gold standard," which was the ultimate aim. During this transition period all calculations and all obligations to pay had to be effected in terms of the mark of the Imperial coinage, and not in terms of territorial currencies. But in addition to the Reich gold coins the taler currencies which had not yet been fully withdrawn could still be used as full legal tender. The point of time as from which this interim period would commence was to be determined by an Imperial Order with the concurrence of the Bundesrat (Art. 2, sec. 2). An order issued on the 22nd September 1875 fixed it for the 1st January 1876. The intention of the legislature was that the Reich's gold standard should

gradually, by dint of withdrawals of the silver coins of full legal tender, develop out of this interim position.

In connection with the general currency legislation, regulations were made for the control of the circulation of paper money and of bank notes.

We have already, when giving a sketch of the position in which the German monetary system found itself, laid stress upon the close connection which existed between the evils in the sphere of the actual monetary system and those in the paper circulation. This close connection was recognised by the governments of most of the Federal States, as well as by the majority of the Reichstag, and a desire was, therefore, evinced finally to regulate the paper circulation as a direct sequel to the reform of the metallic currency. If, nevertheless, the presentation of Bills relating to paper money and bank notes was in fact delayed, the cause of this was to be found in the differences of opinion between the Federal governments on important points of the desired reform, especially in connection with the manner in which the individual governments should be recompensed for the withdrawal of their paper money, the facilitation of such withdrawals, and the question of changing the Prussian Bank into a Reichsbank. It became known that a draft of a bank law, which contained, *inter alia*, provisions for the creation of a Reichsbank had been worked out as early as 1872, and that it had already been signed by the Chancellor of the Reich, when at the eleventh hour the whole project came to naught by reason of the opposition of the Prussian finance minister, Camphausen.

In order to exert pressure upon the various governments to settle as quickly as possible the questions of a paper currency and of the bank, the Reichstag added to the currency law a clause containing certain far-reaching provisions regarding territorial paper currencies and bank notes. In the form in which this Clause 18 was accepted at the second reading, it provided that, at latest by the 1st January 1875, all notes not expressed in terms of the Reich standard, no matter whether they were notes of banks or paper issued by the States, had to be withdrawn, and from that date onwards only such paper currency was to exist as was expressed in terms of the Reich's currency and in denominations of at least 100 marks.

But experience having shown that paper money of large denominations is more frequently presented for conversion than are smaller notes, the paper issued, especially by the smaller States, consisted of small notes, its very existence depending on the unlikelihood of conversion. Moreover, the date prescribed by the new law was very near. The Bundesrat saw itself, therefore, under the necessity of taking the matter into immediate

consideration. But even at this stage there was such divergence of views on this point within the Bundesrat that, by the time the third reading of the Bill was reached, an agreement had not been found possible, and as the Reichstag did not consider it satisfactory to make indefinite declarations, it adjourned the third reading until such time as the government were in a position to put forward definite proposals regarding paper currency.

The Bundesrat now agreed that in principle the territorial notes should be replaced by a paper currency of the Reich—*i.e.* by Treasury notes of the Reich (Reichskassenscheine)—and that these should be allocated amongst the individual States in proportion to their population, so as to facilitate the withdrawal of the territorial State notes. No Bill was, however, drafted, as Bavaria insisted upon the bank question being regulated simultaneously with the paper currency, and Bismarck for political reasons did not wish to give to Bavaria so large a share. But just before the end of the session of the Reichstag, the Federal governments and the Reichstag at last came to an agreement on the phrasing of the controversial Art. 18 of the Bill, in so far as the principle of an Imperial paper currency was concerned. The question of the bank notes was left as before, except that the period for the calling in of notes not expressed in terms of the Reich's standard and the withdrawal of notes of denominations of less than 100 marks was extended to the 1st January 1876. As regards territorial paper issues, however, the following provision was made: "The paper notes issued by the individual Federal States are to be called in at latest by the 1st January 1876, and at least six months' public notice of this is to be given. An issue of Imperial paper notes will be made in accordance with the provisions of an Imperial law to be passed. These provisions will deal in detail with questions relating to the issue and circulation of the Reich's notes, and will specify the facilities to be granted to the individual Federal States in connection with the calling-in of their paper currencies."

The proposed Imperial law foreshadowed in the final clauses of the Currency Act was announced on the 30th April 1874 as an Act dealing with the issue of Imperial Treasury notes. It corresponded in all essential points with the agreements already reached in June 1873 in the Bundesrat. The normal issue of the Imperial Treasury notes was fixed at 120 million marks,¹ *i.e.* 3 marks per head of the existing population. The 120 million marks were to be allocated amongst the individual States to facilitate the withdrawal of the territorial paper notes, but all Federal States were to receive their share in proportion to their populations,

¹ In 1913 the maximum was raised to 240 million marks, and during the war to 360 million marks.

irrespective of whether they had been in the habit of issuing their own paper notes or not. Official statistics, however, showed that as many as 184 million marks of territorial paper notes were at the time in circulation. In particular, a number of small States had issued considerably more paper money than 3 marks per head of their population, and they did not regard the share of the Imperial Treasury note issue allotted to them as sufficient alleviation. It was, accordingly, decided that those States whose paper issue exceeded their share of the Imperial Treasury issue should receive two-thirds of the excess as advances by way of loan from the Imperial Treasury, and, in so far as the latter was unable to make these advance payments in cash, they could be made in Imperial Treasury notes. The Chancellor was at the same time empowered to order the preparation and the putting into circulation of amounts of Treasury notes in addition to the specified 120 million marks, up to the total of these advances. These advances were to be repaid within fifteen years from the 1st January 1876 in equal yearly instalments.

As none of these advances were made in metallic currency, the initial issue of the Treasury notes amounted to 174 million marks, and this sum was according to plan reduced, by 1892, to the 120 million marks statutorily provided for as the normal amount of the issue. The immediate reduction in the paper circulation was quite small, and it took fifteen years to reduce it to about two-thirds of its original volume. In so far as it affected paper currency, the immediate benefits of the reform were to be found, not so much in the restriction of the amounts of circulating paper—a restriction almost universally regarded as very desirable,—but in the uniformity and orderliness of the new paper currency.

The intention of the legislature had been that the Imperial Treasury notes and the bank notes should in no way compete. Up to 1906 the note-issuing banks were prohibited, under Art. 18 of the Currency Act, from issuing notes of less than 100 marks in denomination. The Treasury notes, however, were issued at face values of 50, 20, and 5 marks, although later, when the Reichsbank received authority to issue small notes, it was provided by an Act of the 5th June 1906 that Treasury notes of 5 and 10 marks only should be issued. Such denominations belong essentially to a section of the currency field, which in monetary systems on a metallic basis usually operates by means of metallic circulating media; but even within this sphere there exist purposes for which paper notes are more useful than metal coins (consignment by letter post, etc.).

In regard to the legal aspects presented by the Imperial Treasury notes the following comments are to be made:—

There was to be no compulsion in regard to their acceptance in

private transactions. On the other hand, the law provided that they were to be accepted in payment at their face value when presented at any pay-offices of the Reich and of the Federal States. They thus had a so-called "Treasury tender" (*Kassen Kurs*). Further, the Imperial Treasury was placed under an obligation to exchange the notes for cash whenever asked to do so. But no reserve fund was created for such conversion of the notes. On the contrary, the mere undertaking of the Reich to convert was in actual practice accepted by the Reichsbank. The Bank Act of the 14th March 1875 transferred the conduct of the cash transactions of the Reich to the Reichsbank, and following upon this decision the Chancellor published on the 29th December 1875 an announcement transferring the administration of the cash transactions of the central authority from the Treasury to the Head Office of the Reichsbank, which had to transact this business under the title of "*Reichshauptkasse*" (chief Imperial pay-office). The chief Imperial pay-office is thus nothing more than a branch of the Reichsbank's central pay-office.

The practical utility of the undertaking to convert, and the absence of a legal tender quality, were strongly attacked, particularly by Bamberger. He argued that in times of crisis the convertibility would be a dead letter, and that it would be necessary to enforce legal tender rights as soon as the resulting loss of confidence was found to militate against the notes being willingly accepted. He thought, therefore, that the provisions in question offered but an illusory security and were only "window dressing." But these relevant arguments could not gain acceptance in the existing state of public opinion, which was all at sea when it came to the question of the guarantees which a paper circulation called for.

The final act of the momentous legislation reforming the monetary institutions of Germany was the Bank Act of the 14th March 1875. It regulated the issue and circulation of bank notes, the spheres of activity of note-issuing banks, etc. It also transformed the Bank of Prussia into an Imperial bank,¹ and allotted to the latter the duty of regulating and supervising the currency circulation of Germany.

We propose now to deal with only the most essential points arising directly in connection with the circulation of bank notes.

The privilege of issuing notes can be acquired by banks only by Act of Parliament. Only in this way, too, can the note issue be made to exceed the amount permitted by the Bank Act.

Bank notes could, in accordance with the Act of 14th March 1875, be issued only in denominations of 100, 200, 500, and 1000

¹ [The following explanations refer primarily to the position as it was before the War. Since 1924 the currency and banking situation in Germany has been regulated afresh.]

marks, and in multiples of 1000 marks. Not until the 20th February 1906 was the Reichsbank—but not the private note-issuing banks—authorised by law to issue notes of 50 and 20 marks.

The Bank Act imposed no obligation as to the compulsory acceptance of bank notes in payments which the law required to be made in money; neither could such an obligation be imposed upon the State Treasuries by State laws. On the other hand, the pay-offices of the Imperial Treasury and of the State Treasuries were required by administrative orders to accept the notes of the Reichsbank. The Bank Order of the 1st June 1909 made the notes of the Reichsbank full legal tender in private transactions also. The notes of the other banks, of the so-called "private" note-issuing banks, are not universally accepted by the Imperial and State pay-offices of the whole Reich, but only within a limited area of circulation.

The banks were required to honour their notes without demur at their full nominal value whenever presented, not only at their head offices but also at their branch offices. The Bank Order of the 1st June 1909 expressly provided that the notes must be converted "into gold coins of the Reich."

The note issue of the individual banks is limited in part to a specified legal maximum, and in part there is no direct limit. Thus the Reichsbank has a right of issuing notes "in accordance with the requirements of its business." On the other hand, the right—for instance, of the Bavarian Bank—to issue notes was limited to amounts not exceeding 70 million marks. The issue was also indirectly restricted by the provision of the so-called one-third cover, and by the system of a note tax. The former provision required that the banks should at all times have at call German money of full legal tender and Imperial Treasury notes, or gold bullion, or foreign coins (reckoning the pound weight of fine gold at 1392 marks) aggregating at least one-third of the notes which they had put into circulation. The system of a tax on notes consists in an arrangement whereby every note-issuing bank had a figure fixed for that part of its note issue which exceeded the bank's cash reserve, and it had to pay to the Imperial Treasury every year 5 per cent. of any excess over and above this figure. This was intended to secure that the banks should not in their note issue exceed the limits of the contingents fixed for them and not covered by reserve. The total of the tax-free contingents was calculated in the Bank Act at 385 million marks. Of this amount the Reichsbank alone received 250 million marks, with a proviso that its contingent should be increased by the amounts becoming available on account of other banks relinquishing their rights. In the year 1900, of the thirty-two private note-issuing banks existing at the time of the

passing of the Bank Act, only seven were still remaining, and the tax-free note contingent of the Reichsbank had grown to 293.4 million marks. The Bank Order of the 7th June 1899 increased the tax-free contingent of the Reichsbank to 450 million marks. This was subsequently increased by a further 22,829,000 marks by the Frankfort Bank, the Bank for South Germany (Darmstadt), and the Brunswick Bank ceasing to issue notes. The Bank Order of the 1st June 1909 increased the tax-free contingent of the Reichsbank to 550 million marks, with a proviso that this amount could be raised to 750 million marks during the last few days at the end of the quarter.

The Reichsbank differs from private note-issuing banks, not only in the size of its dealings, its basic capital and reserve fund, its stock of metal, the circulation of its notes, etc., and the number of its branches spread over the whole of the Reich, but also in that the important duties of regulating the currency circulation fall exclusively to its share.

Up to the time when the entire German monetary system was completely altered by the War, the Reichsbank supervised and regulated all the international relations of the German monetary system. The Bank was, on the one hand, by reason of the provisions regarding the purchase of gold, the intermediary between the commercial world and the mints, and in this way it attracted to itself in the first place all foreign gold coming into the country for monetary purposes. On the other hand, it was the reservoir in which was concentrated the demand for gold for payments due to foreign countries. It exercised a regulating influence upon the international flow of gold which operated through its pay-offices, by manipulation of its discount policy, and also by other less important means.

In so far as the circulation of currency within the country was concerned, the Reichsbank used its note issue mainly for the purpose of adjusting the amounts in circulation to the fluctuations in demand; but in this sphere of its activities also its discount manipulations were able to regulate the demand on the money market.

Again, the Reichsbank, with its many branches, is the institution which regulates the local circulation of currency in different parts of the Reich. By statute and by ordinance a number of duties were imposed upon the Reichsbank in this respect—as, for instance, in connection with the exchange of the Imperial token coins for gold coins, the conversion of the Imperial Treasury notes, etc. In practice, however, the Reichsbank went far beyond its legal obligations and generally accepted payment in all kinds of currencies, and paid out for its own account in any desired type of currency. This enabled the commercial world to

dispose of any superfluous amounts of particular kinds of currency to the Bank's local branches, and to obtain from these the particular types of currency that were needed.

¶ 6. Completion of the Currency Reform

With the passage of the laws relating to coinage, paper money, and banks only a part of the difficult task of reforming the monetary system had been completed. The next part fell to the administrative activities of the Imperial government. These administrative activities lifted the gold standard and the Imperial standard out of the law books and gave them life.

These administrative duties were unprecedented in character and extent. Whereas England, in its transition to a gold standard, simply preserved and formally ratified the existing state of affairs, which had developed during the operation of the legal double standard, it was necessary in Germany to replace by gold the silver which predominated almost exclusively in the circulation. The question as to where the gold was to be obtained was, at least in part, solved by the war indemnity, but the problem of how to dispose of the silver continued as difficult as ever. The result of the calling in of silver showed that at that time 1530 million marks in silver coins existed in Germany. The size of the population being what it was at the time, hardly more than 450 million marks of this amount could be retained for silver token coins. The large remaining quantity of 1080 million marks had to be exchanged for gold under the new legal provisions. This amount corresponded to about 6 million kg. of silver, whilst the annual production of silver in those days amounted to about 2 million kg.

The responsibility of the government for the disposal of this large mass of silver was by no means small, because even the smallest difference in price meant a difference of millions. The government, moreover, had to be careful, if only on account of its own financial interest, not to exercise by its sales too heavy a pressure on the silver market.

It can, therefore, be easily understood that the Imperial government only hesitatingly entered the silver market as a seller.

If the French milliards had not in the meantime been paid, and had not thereby supplied the government with the means of obtaining its gold supplies, it would have had to obtain them by selling silver. As it was, the government could obtain its gold and coin it independently of its silver sales, and it made the greatest use of this possibility. Not only were the Imperial gold coins struck from the gold actually coming in, but other proceeds of the indemnity payments, such as bills of exchange, bank drafts, etc., were used to a large extent for the purchase of gold on the

London market. Only from 1875 onwards were the purchases of gold effected exclusively from the proceeds of sales of silver in London.

How great was the change of conditions in the international distribution of gold may be seen from the following figures:—

The Reich received out of the indemnity an immediate payment of 220 million marks in foreign gold coins. Further, partly from the other proceeds of the indemnity, and partly from the proceeds of silver sales, it procured between 1871 and 1879 gold to the value of something like 1260 million marks. In the aggregate, therefore, it obtained from foreign countries in those nine years 1480 million marks of gold. From 1875 onwards certain not inconsiderable imports of gold for private account must be added. Up to the end of the year 1879 Reich gold coins had been struck to a total of 1719 million marks, and of this amount 89½ million marks had been struck from the German territorial coins which had been called in. The gold obtained by the Reich and the amounts coined in the individual years were as follows:—

Year.	Gold obtained by the Reich. (Marks.)	Imperial Gold Coins struck. (Marks.)
1871 and 1872	523,976,336 ¹	421,474,130
1873	516,335,953 ¹	594,362,890
1874	318,219	93,507,380
1875	100,974,011	166,420,850
1876	53,655,681	159,424,280
1877	166,086,223	112,539,475
1878	91,953,155	125,130,790
1879	27,314,325	46,387,060
	1,480,613,903	1,719,246,855

The form in which this gold was delivered to the various German mints for coinage purposes is also of interest. On the whole, the mints received from 1871 to 1879 a total of 1,172,731 lbs. weight of fine gold. This included:—

647,557 lbs. weight fine in bars.

391,976	„	„	„	francs and gold Napoleons.
49,770	„	„	„	Russian gold coins.
37,532	„	„	„	dollars and eagles.
30,404	„	„	„	sovereigns.
12,823	„	„	„	Spanish Isabellines.

¹ Excluding the territorial gold coins called in, but including foreign gold coins paid in on account of the French indemnity contributions.

The remainder consisted of various gold coins of lesser importance.

For a time, indeed, a certain reaction against this tremendous transfer of gold to Germany set in. In the years 1874 and 1875 especially not inconsiderable quantities of gold were exported again from Germany. But there still remained an important increase in the supplies of gold in Germany which can be estimated, from the accurate data available, to have amounted to about 1300 million marks for the period from the beginning of the reform to 1879.

The Imperial Government proceeded less energetically with the disposal of its silver coinage, which became redundant by reason of the large coinage of gold. The endeavour to preserve the silver market as much as possible from too large a drop was combined with a considerable underestimate of the amounts of silver currency which had to be got rid of. The territorial silver coins which were being called in were, up to the year 1876, used mainly for coining the Imperial silver coins, and the silver was only sold to a small extent.

It is true that men who had a surer insight into the trend of things, especially such men as Bamberger and Soetbeer, incessantly pressed the Government to proceed with more speed. It is true, also, that later, especially during the year 1877, when conditions were favourable, large sales were effected. But the excessive hesitation at the beginning brought its revenge. In later years the sales took place with ever-growing losses on account of the continual fall in the price of silver.

Deliveries of silver to the various German mints for coinage and sales of silver in the respective years were as follows:—

Year.	Assignment of Silver to the German Mints for Coinage. Pound fine.	Sales of Silver. Pound fine.
1873	83,177	39,300
1874	574,484	770,300
1875	1,232,898	215,000
1876	2,197,734	1,343,600
1877	172,236	2,969,400
1878	10,557	1,387,500
1879	..	377,800
	4,271,086	7,102,900

In addition, the Hamburg Bank sold in the first half of the year 1872 about £500,000 sterling of fine silver, and the Bank of Prussia—that is, the Reichsbank—sold from 1871 to 1876 about 430,000 lbs. weight of fine silver.

While these sales were taking place the price of silver fell considerably. At the end of the seventies the price of silver in London was 6rd. per ounce standard, and in the first months of the year 1879 it fell to 5od. This corresponded to about 150 marks per kg. of fine silver, whilst 180 marks in old silver coins were required to produce a kilogramme of fine silver, leaving out of account abrasion and bad coining. Up to 1879 the Imperial government had sold, in all, about $3\frac{1}{4}$ million kg. of silver, and had incurred a loss of 72 million marks. Experts estimated at the time that about 475 million marks in talers were still available, and that in the disposal of these a further loss of between 90 and 100 million marks would be incurred.

The depreciation in the price of silver, which prejudiced many interests, has often been ascribed to the German sales of silver, although these, important in themselves, were, as compared with other decisive factors in the silver market, relatively of great importance only in the year 1877.

An exaggerated estimate of the effects of German sales of silver on the depreciation of that metal and of the losses which were to be expected if the sales of silver were to continue, led the Imperial Chancellor to order in May 1879 a suspension of such sales.

This step, which interrupted the plan laid down for the reform, was never revoked. The small amount of silver bullion which had remained in the possession of the Reich in the year 1879, supplemented by the melting down of about $1\frac{1}{4}$ million marks in Union talers, was sold in 1885–86 to the Egyptian government, which at that time had ordered silver coins to be struck for it in Berlin. Over and above this, an agreement was reached in 1892 with Austria-Hungary, by which the latter State took over for melting purposes 26 million marks of Austrian talers at that time circulating in Germany. The supply of talers which still remained in the year 1879, and which amounted at that time to about 475 million marks, was thereby reduced by about $27\frac{1}{2}$ million marks.

Supplies of talers were, moreover, being more and more reduced, because the increasing population of the Reich and the advance in commerce necessitated a corresponding increase in the amounts of Imperial silver coins struck, and the raw material for these new coins could not, in accordance with the law, be obtained by new purchases of silver bullion, but only by making use of the available supplies of talers. By the time the Currency

Order of the 1st June 1900 was issued, the taler supplies had already been reduced to about 360 million marks. Since then, the raising of the quota per capita for the issue of silver coins by the Reich, and the further increase of the population of the Reich, made possible such progress in the conversion of talers into Imperial silver coins that by the Order of the 27th June 1907 it was possible completely to demonetise, as from the 1st October 1907, the still circulating talers. The period of conversion expired on the 30th September 1908. By the Currency Order of the 19th May 1908, which had been issued in the meantime, the contingent of the Reich silver coins was raised to 20 marks per head of the population, and a Reich silver coin of 3 marks was introduced, merely as a token coin and as a substitute for the taler, while the actual needs for the coinage of Reich silver coins had increased to such an extent that the Finance Department had to resume the purchases of bar silver. The profits resulting from the minting of coins were, in accordance with the Currency Order mentioned above, to be used for meeting the extraordinary expenditure of the Reich and also to strengthen the Treasury reserves.

By the demonetisation of the taler the reform of the German currency was at last brought to its formal completion. On the 1st October 1907 the "Reich standard," which was provided for in the first clause of the Currency Act of 1873, gave place to the "Reich gold standard."

The Bundesrat had, indeed, by the Act of the 6th January 1876, been accorded the right of placing the talers on an equality with the Reich silver coins as token coins; but this privilege was never exercised, and accordingly, up to the 1st October 1907, talers were full legal tender for any amount side by side with the Reich gold coins, notwithstanding that the amount of silver they contained, owing to the continued depreciation of silver, fell to only 1.15 marks in value (when the price of silver was 23d.). In this respect alone was the principle of a gold standard violated. It is also true that even before the 1st October 1907 a fixed ratio of value between the German money as such and gold existed in the sense that the value of the mark corresponded, with very small fluctuations, to the value of $\frac{1}{187\frac{1}{2}}$ of a lb. weight of fine gold; but the gold coins were not the only full legal tender; they shared this privilege with the silver talers. The German monetary system was, therefore, called a "limping gold standard."

Only when the taler was demonetised, together with the last remains of the old territorial silver coins, was this state of affairs altered, and the "limping gold standard" gave place to the gold standard pure and simple—the "Reich standard" giving place to the "Reich gold standard."

In so far as the actual components of the German circulation are concerned, from the beginning of the reform up to the outbreak of the Great War, the following figures may be quoted:—

*Coinage of Reich coins from 1871 to the end of March 1914.
after deducting amounts called in again.*

	Marks.
1. Gold coins—	
20-mark pieces	4,412,752,600
10-mark pieces	706,672,400
Total gold coins	5,119,425,000
2. Silver coins	1,158,991,000
3. Nickel and copper coins	132,791,500

Of the gold coins, after deducting those melted down for industrial purposes and those recoined by foreign mints, there probably were in the year 1914 still some 3·4 milliard marks available. To these supplies of Reich gold coins must be added the supplies of gold bars for monetary purposes and the amounts of foreign gold coins. Taking the average for 1914, there were in that year in the Reichsbank alone, as cover for notes, 421 million marks in the form of gold bars and foreign coin. The monetary gold supplies of Germany at the outbreak of war can thus be estimated at about 3820 million marks. Of the Reich silver coins, after taking into account the loss through wastage, etc., a stock in round figures of 1100 million marks may be taken as having existed. Talers, from the time of their demonetisation, were negligible. If the nickel and copper coins be estimated at 120 million marks, a total for the year 1914 of about 5040 million marks in metallic currency is obtained, of which 3800 million marks in round figures—that is, roughly three-quarters—was in gold.

A fixed amount of 120 million marks of paper circulation consisted of Imperial Treasury notes. The note issue of the Reichsbank amounted in the year 1913 to 1958·2 million marks, and that of the private note-issuing banks amounted to 148·8 million marks. The total German note circulation was thus 2107 million marks, and the total paper currency issue 2227 million marks. With a metallic reserve of 1420·6 million marks, the German note-issuing banks showed a note circulation of only 686·4 million marks uncovered by metal. If to this the 120 million marks of Imperial Treasury notes, for which there was no cover, be added, a total of 806·4 million marks of paper notes is shown as circulating without cover. The stocks in the Reichsbank

and of the private note-issuing banks of Imperial Treasury notes and of "notes of other banks" amounted to 83·4 million marks, so that the net amount of uncovered paper money in circulation was 723 million marks. The uncovered paper money was thus in the year 1913 about 14·3 per cent. of the metallic currency, about 19 per cent. of the stock of gold, and about 12½ per cent. of the total money in circulation, estimated in round figures at 5760 million marks.

By far the largest part of German currency at the time of the outbreak of war consisted of gold and of paper notes for which gold cover existed.

The following table shows the change in the volume and composition of the German metallic currency which took place from the beginning of the currency reform and from its premature conclusion in the year 1879:—

Time.	Gold Currency.		Silver Currency.		Nickel and Copper Currency.		Total Metallic Supplies.
	Mill. Marks.	Per cent.	Mill. Marks.	Per cent.	Mill. Marks.	Per cent.	Mill. Marks.
(1) Beginning of reform	245	12·4	1,735	87·4	3·6	0·2	1,985
(2) End of 1879	1,530	62·5	875	35·7	45·0	1·8	2,450
(3) End of March 1914.	3,820	78·0	1,100	21·8	120·0	0·2	5,040
Increase of (3) to (1).	+3,575	..	—635	..	+116·4	..	+3,055
Increase of (3) to (2).	+2,290	..	+225	..	+ 75	..	+2,590

CHAPTER VI

THE EXPANSION OF THE GOLD STANDARD, AND THE DEPRECIATION OF SILVER FROM THE TIME OF THE GERMAN CURRENCY REFORM TO THE PRESENT DAY

¶ 1. International Currency Events during the Seventies of the Nineteenth Century

WHEN in the year 1871 Germany decided to go over from the silver to the gold standard, she was the first State to draw correct conclusions as to the changes in international currency conditions wrought by the Californian and Australian gold supplies. For years the adoption of the gold standard had been energetically debated in the most important States. Germany made use of the favourable moment presented by the war to be the first to take action and secure an advantage over other nations in the seemingly unavoidable process of changing the currency constitution.

If the assumption which had led Germany to go over to the gold standard was correct, it was certain that she would not long remain alone on the road she had taken. In point of fact she soon found a number of imitators.

In the year 1872 the Scandinavian kingdoms of Sweden, Norway, and Denmark adopted the course taken by Germany, faithful to the principle laid down by their representatives at the Paris Conference of 1867 that their transition to the gold standard would necessarily depend upon the attitude taken by Germany. These three States, which, like Germany, had heretofore had a silver standard, decided, by an agreement between them dated 18th December 1872, to introduce a common system of currency based on the gold standard. The transition from the silver standard to the gold standard was effected independently by each of these States between the years 1873 and 1876. Their currency circulation was so small that neither were there large quantities of silver to be disposed of nor was it necessary to procure large quantities of gold.

On the whole, Sweden and Norway threw on to the market silver to the value of about 22 millions, and Denmark to the value of about 17 million marks.

In Holland¹ a Commission, which had been appointed to investigate the currency question, presented its report in December 1872. The Commission reported that the silver standard had become untenable for Holland. In conformity with their attitude at the Paris Conference of 1867, the double standard was declared to be theoretically the best, but it was further declared

¹ Cf. Kalkmann, *Hollands Geldwesen im 19 Jahrhundert*, in Schmoller's *Jahrbuch*, vol. xxv, p. 4.

that there was no prospect of its practical realisation unless indeed Germany decided, even at this late hour, in its favour. In order to keep the way open for both the double standard and for the gold standard, the Commission recommended the provisional acceptance of the double standard, under conditions which would allow of the restriction or total suspension of the coining of silver.

The Netherlands Bank thereupon stopped purchasing silver (in December 1872). By a law of the 21st May 1873, the Dutch Government authorised the cessation of the coinage of silver, and made immediate use of this authorisation. The Dutch mints, therefore, like the German mints, were now closed to silver, although no definite steps were taken for the immediate coinage of gold coins. A draft of a law which proposed to introduce a gold 10-gulden piece, and to demonetise silver by way of formal transition to the gold standard, was rejected on the 2nd March 1874 by the Second Chamber. But the coinage of silver continued, with but a short interruption, to be suspended. The option of suspending the coining of silver had at first been granted to the government only provisionally, up to the 1st May 1874. From that date the Utrecht mint was again open to silver, which immediately began to stream in in large quantities. By the end of November 1874 as many as 32 million silver gulden had been coined. The suspension of silver coinage was now again ordered by a law dated the 3rd December 1874.

As neither gold nor silver could now be transformed into Dutch coin, and as the balance of trade was favourable to Holland, a considerable rise in the value of Dutch currency took place, and foreign exchanges rose to an exceptional extent. The calculations for Dutch trade thus became upset. The large claims which Holland had in foreign countries seemed to have depreciated in terms of Dutch currency. In order to bring an end to this undesirable state of affairs there was but one way open—the linking up of the Dutch currencies with gold by allowing the free coinage of gold.

This pressure of circumstances led to the passage, on the 6th June 1875, of a law establishing a gold 10-gulden coin, and permitting its coinage on private account. The coinage of silver, which had thus far been only provisionally suspended, was definitely stopped by the law of the 9th December 1877. The silver coins in circulation were not, however, demonetised. By a law of the 27th April 1884 the government was given power to melt down and sell for gold silver gulden up to 125 millions, should an exceptional fall in Dutch currency occur. The favourable trade balance of Holland has, however, always from that time caused the rate for Dutch money to remain at gold par.

The Dutch East Indies introduced, by a law of the 28th March 1877, the same organisation of their currency system as obtained in the motherland.

Even though these measures did not call in silver coins and throw them on the market, the suspension of silver coinage by Holland and by its colonies nevertheless meant a further and a not inconsiderable restriction of the possibilities of finding a market for the white metal.

Whilst the Dutch were forced, largely against their will, to go over from silver to gold by the necessity of stabilising their exchanges with those of the most important trading countries, this decisive change took place in the U.S.A. without any such external pressure.

The American Union found itself, after the Civil War, with a preponderating paper circulation. The value of its currency accordingly fluctuated in any case, and changes in the metallic basis of the monetary system were of no direct practical importance until cash payments were re-established. But even during the period of the paper currency gold was most decidedly preferred to silver. In the public eye, ever since the change in the double standard system in the years 1834 and 1853, gold had become ever more the basis of the American monetary system, and when, towards the end of the sixties, the problem was tackled of abolishing the paper currency, no one dreamt of a return to the double standard.

In the year 1869 a draft was prepared in the Treasury for a revision of all currency laws. This draft abolished the free coinage of the silver dollar, and the legal tender of all silver coins was restricted to amounts up to 5 dollars. As it was asserted at a later date that the abolition of the standard dollar had been smuggled into the coinage law, it is necessary to point out that the abolition was already provided for in the first draft, that the memorandum accompanying the draft Bill expressly drew attention to it, and that during the debates on the Bill the suspension of free silver coinage and the restriction of the legal tender of silver coins was fully discussed. The Bill, the consideration of which was interrupted several times, passed into law on the 12th April 1873.¹

At the moment the law attracted but little attention, as for all immediate purposes everything remained *in statu quo*. Paper currency continued for the time being. Silver had for a long time past ceased to be coined on private account, and the standard silver dollar, the legal tender of which was restricted, was, in practice, rarely met with. Not until the years 1875 and 1876,

¹ Cf., in particular, Prager, *Die Währungsfrage in den Ver. Staaten von Nordamerika*, 1897.

when marked depreciation of silver set in, was the attention of the silver interests drawn to the law of 1873.

Of particular importance in the currency policy of the period were the steps taken by the countries belonging to the Latin Union, especially by France.

Before the war France had been the country which subjected the currency question to the most thorough-going discussion. Whilst the other States of the Latin Union had expressed themselves from its very foundation in favour of the gold standard, the double standard still had energetic supporters in France, and it may be stated with truth that it was only the opposition of these that before the war of 1870 had hindered the international currency question from being decided in favour of gold. In any case, if the war had not intervened, the decision on the question of the standard would have lain in the hands of France.

The war and its consequences had made it impossible for France for some time to take any active part in currency matters. The French system itself was disturbed by the suspension of the convertibility of its notes by the Bank of France. Through the inconvertibility of the bank notes, the inflow of metal into the French mints was very adversely affected during the years 1871 and 1872. This also affected the changes which began to take place at that time in the relation between the values of the precious metals.

It has already been pointed out that, so long as the ratio of value between the two metals remained such that there was no danger of French gold being forced out of circulation by freely coined silver 5-franc pieces, the conditions which would have forced upon France a decision in currency policy were lacking. From the middle of the sixties, simultaneously with the decreased demand for silver from Asia, a slight drop in the price of silver took place. Whilst in June 1866 the London market ratio between the metals was still, on the average, 1:15.19, in the succeeding years this market ratio more and more approached that upon which the French double standard was based. On the average of the year 1867 it was a little more unfavourable for silver (1:15.57), and the white metal began to be brought in greater quantities to the French mints for coinage. Whilst during the four years 1863-1866 a total of little more than 1 million francs in silver coins had been struck, in the years 1867-1870 the coinage amounted to 259.6 million francs. Nevertheless, the amounts of gold also coined during this period, aggregating 828.2 million francs, considerably exceeded those of silver.

In view of the inconvertibility of the notes of the Bank of

France, the coinage of both silver and gold diminished very greatly in the years 1871 and 1872. The figures were:—

	Silver Coins.	Gold Coins.
1871,	4,710,905 francs.	50,169,880 francs.
1872,	389,190 „	—

In the meantime the ratio between the precious metals had further shifted to the disadvantage of silver. Towards the end of 1872 the ratio, calculated on the basis of the prices for silver ruling in London, worked out at 1 : 15·85, and it went to 1 : 16 in the third quarter of 1873.

On account of this, and by reason also of the fall in the premium on metallic money in France, the coinage of silver at the mints of the Latin Union again became a profitable proposition. In France alone in the year 1873, during which no gold whatever was coined, there was a silver coinage amounting to 154·6 million francs, although from September onwards the coinage of silver was no longer unrestricted. In the whole Latin Union the coinage of silver during that year aggregated 308·5 million francs.

The danger associated with a double standard system—namely, sudden change to a predominating silver circulation—seemed imminent, and the countries of the Latin Union were forced to decide whether they would put up with these possible consequences of their system, or sacrifice it in order to preserve their gold circulation.

In the middle of the century, when the ratio between the metals had shifted in the opposite direction, no one in France, with the exception of a few theorists, had thought of protecting the existing silver circulation by excluding the inflowing gold. All that was then done was to secure the necessary amount of silver currency required for small transactions by coining silver as an undervalued token coin. Now, however, in face of the pressure from silver, it was not desired to give up the gold circulation, which had been reached through this passive attitude. Public opinion, especially in commercial and industrial circles, demanded the suspension of the coinage of silver, and although at that time the Ministers of Finance of both France and Belgium were well known to be supporters of the double standard, the government found themselves compelled to interfere.

Early in September 1873 the Belgian Minister of Finance, Malou, restricted the coinage of 5-franc pieces at the Brussels mint to 150,000 francs per day, whereas it had previously amounted to about 300,000 francs per day. About the same time, on the 6th September 1873, the Paris mint was ordered not to exceed 200,000 francs per day in its coinage of silver, which had

previously reached the daily total of 750,000 francs. The mint at Bordeaux was limited to 80,000 francs.

Switzerland did not in those days coin any of its own money. It was instrumental in summoning in January 1874 a Conference of the States belonging to the Union for the purpose of inquiring into the position and arriving at decisions. Switzerland demanded a complete suspension of the coinage of silver, but the Conference would not go so far. It satisfied itself, in the Convention of the 31st January 1874, with allocating to the individual States of the Union maximum amounts for the coinage of 5-franc pieces. The aggregate of these amounts was 140 million francs. For the years that followed, similar figures were fixed for the several States (by the Conventions of the 5th February 1875 and the 6th February 1876). In the middle of 1876 both France and Belgium at last definitely suspended the coinage of silver legal tender money. Only silver, already accepted by the French mints in exchange for mint-certificates, was still coined in the next few years. By an agreement of the 5th November 1878 the suspension of the free coinage of silver was at last ordered for the whole area covered by the Latin Union.

Nevertheless, the amounts of legal tender silver coins struck by the Latin Union in the years 1874-1879 were not inconsiderable, as is seen from the following statistical table:—

Year.	France.	Belgium.	Italy.	Switzerland.	Greece.	Total.
1874	59,996,010	12,000,000	60,000,000	7,978,250	..	139,974,260
1875	75,000,000	14,904,705	50,000,000	..	5,988,995	145,893,700
1876	52,661,315	10,799,425	31,951,715	..	9,429,345	104,841,800
1877	16,464,285	..	22,048,285	..	44,525	38,557,095
1878	1,821,420	..	9,000,000	..	..	10,821,420
1879	..	..	20,000,000	..	..	20,000,000
Total.	205,943,030	37,704,130	193,000,000	7,978,250	15,462,865	460,088,275

The quantities of silver coins thrown on the market for disposal by the countries of the Latin Union were no larger than those disposed of by the Netherlands and the United States of America. The available 5-franc pieces, to the amount of several milliards of francs, remained in circulation as legal tender money, and just as the silver gulden in Holland and the talers in Germany, so these 5-franc pieces managed, notwithstanding the continual depreciation of silver, to pass at their nominal gold parity value. They were able to do so by reason of the favourable position of

French exchanges. From 1878 onwards, the volume of French coinage in circulation could increase only through an influx of gold. Such an influx, on a large scale, did actually take place, and the total of the silver legal tender coins gradually lost more and more its relative importance as part of the total currency in circulation.

When the Latin Union ceased to coin silver as legal tender money, the fate of silver as a money metal was sealed, in so far as European civilised countries were concerned. Even Austria-Hungary, a country on a paper-issue basis, turned away from silver when, towards the end of 1878 and 1879, with a falling price of silver, the rate of exchange of the Austrian paper gulden in terms of foreign gold standard currencies remained relatively stable and the premium on the silver gulden vanished, again rendering the coinage of silver gulden a profitable proposition. Although the mints were under a legal obligation to coin silver for private account, they were ordered by the Ministry of Finance, in the spring of 1879, to accept no further silver for coinage. As all commercial nations of importance had now organised their monetary system on a gold basis, there could be no question of Austria reverting to its original silver standard.

Russia also, while retaining its paper issue, suspended at the same period, and for similar reasons, the free coinage of its silver rouble.

Thus within a few years a radical change in the international currency machinery had taken place. When, after being drawn off in large masses by Asia in the fifties and sixties, silver began in the seventies again to force its way into European circulation, it found the door banged, barred, and bolted against it by one country after another, even by countries on a paper basis. Ludwig Bamberger, at the time, aptly described this historical and world-wide phenomenon as the "dethroning of a world-monarch." All important civilised European States ostracised the metal which for thousands of years had enjoyed equal privileges with gold. Only Asia, Mexico, and a few Central and South American countries remained open to silver.

2. Changes in Currency Policy from 1878 to 1893

We have seen how, from the early seventies onwards, measures against silver followed each other in one important country after another. Towards the end of the seventies a halt was called in this process. It lasted longer than a decade and was due to a variety of factors.

First of all, the regulations made in the seventies by all the more important European countries completed the closing of their

mints to silver. All European countries of importance, which had any kind of monetary system on a metallic basis, had introduced the gold standard, or had at least based their international exchanges on gold. The countries still outside the circle were partly those, such as Austria-Hungary, Spain, and many South American States, which were not financially in a position to establish and maintain a well-organised monetary system, and partly—as were the Asiatic Silver Standard States—countries which had not yet been affected by the conditions which in European countries had rendered it desirable to limit the circulation of silver and to secure a predominant gold circulation.

The second cause of this sudden pause was the drop in the production of gold, which made itself felt as from the second half of the seventies. It should be remembered that the average annual output of gold in the fifties and sixties had been nearly 200,000 kg., and that it had dropped below 150,000 kg. by 1883. It was thought that this drop would be permanent. The work, of which mention has already been made, on the future of gold (*Die Zukunft des Goldes*), by Eduard Suess, had just been published. It foretold a permanent reduction in gold production on geological grounds.

Certain changes in international gold movements accentuated the effect of the diminishing production of gold, especially as far as European countries were concerned. The U.S.A. had been in the habit of sending a large part of their output of gold to Europe. At the end of the seventies, having resumed cash payments, they began for the time being to attract considerable quantities of gold to themselves. A series of exceptionally good harvests enabled them to do this. At the same time the imports of gold into India soared. How greatly these movements affected the world-supply of gold outside the United States and India can be seen from the statistical table on p. 183.

Considering how pressing were the needs of expansion in the circulation of gold in those countries which had closed their mints to silver, some of which were in a really difficult stage of transition; considering, further, the effects of the drop in the production of gold, and especially in the yearly amounts made available for the world outside the U.S.A. and India, it will be appreciated how difficult from the second half of the seventies up to the early nineties were the conditions for the extension of the gold standard to those countries which were on a silver standard or had disorganised currency systems.

To this must be added the further factor of the power of the interests affected, directly or indirectly, by the price of silver. The depreciation of silver appeared to be of detriment to the silver mining interests. It hit the large number of persons holding

securities expressed in terms of silver (Austrian and Mexican loans, etc.). Finally, it disorganised, to a degree hitherto unknown, the exchanges between gold and silver standard countries. These exchanges had heretofore moved within relatively narrow limits, as the ratio of value between gold and silver had remained more or less stable. The collapse in the price of silver destroyed this approximate fixity in the ratio and produced a depreciation of silver currencies, the ultimate result of which could not be foreseen.

Periods (Annual Averages).	Gold Out- put of the World. (1000 Marks.)	Gold Out- put of U.S.A. (1000 Marks.)	Gold Out- put out- side U.S.A. (1000 Marks.)	Excess of Gold Ex- ports from U.S.A. (1000 Marks.)	Excess of Im- ports of Gold into India. (1000 Marks.)	Amount of Yearly Output available for World outside U.S.A. and India. (1000 Marks.)
1871-1875	485,200	166,000	319,200	+161,000	43,900	436,300
1876-1880	481,000	178,700	302,300	- 47,200	10,500	254,600
1881-1885	432,300	134,100	298,200	- 84,400	77,100	136,700
1886-1890	467,700	140,100	327,600	+ 14,800	43,800	298,600
1891-1895	685,600	157,900	527,700	+160,200	17,900 ¹	670,000
1896-1900	1,080,000	273,000	807,000	-106,000	98,000 ¹	603,000
1901-1905	1,354,000	336,600	1,017,400	+ 5,800	129,000 ¹	894,000
1906-1910	1,819,900	399,100	1,420,800	- 65,300	211,800 ¹	1,143,700

The depreciation of silver affected all civilised countries. The slump in silver mining was most felt in the U.S.A. and, to a lesser degree, in Germany. Germany was also a large holder of securities payable in silver. The disorganised silver currencies introduced into international trade, especially into trade with Asia, an element of uncertainty from which England was the greatest sufferer. The close financial relations between England and its Indian Empire were very greatly disturbed. There were also to be considered the activities of the interests which hoped to gain by a depreciation of money and to whom silver, owing to the very drop in its value, appeared the ideal substance for a currency. The American "inflationists" were a case in point. Finally, an important factor was the disinterested enthusiasm of the theorists who advocated bimetallism.

¹ Inclusive of Indian production of gold.

In these circumstances it is comprehensible that serious efforts should have been made to bring about a recovery in the price of silver. A movement in favour of bimetallism was engineered. It aimed at a "rehabilitation of silver." The mints of all countries were again to be thrown open to silver. Like gold, it was to be coined without restriction, so that it might recover its old value. Silver was to be re-established as a money metal and to be given the same privileges as gold.

The United States—ever the country in which material interests are most assertive—having the largest silver interests, was the first to develop a strong movement in favour of silver. It was the only country in which the silver party gained any positive successes, and from which in subsequent years fresh agitations in favour of international bimetallism repeatedly emanated.

The movement, however, nowhere succeeded in its real aim of restoring the free and unrestricted coinage of silver. With the sole exception of the radical silver party of the U.S.A., who could never bring their influence fully to bear, the world had come to the conclusion that the restoration of the free coinage of silver on the basis of a double standard could only be established by an international agreement between the most important civilised countries to introduce it simultaneously. But all attempts to bring about such an agreement met with failure.

In August 1878, at the invitation of the U.S.A., an International Conference met "for the purpose of arriving at an international agreement in regard to bimetallic currency systems, and for the establishing of a fixed ratio of value between gold and silver." Germany refused to send a representative to the Conference, and England accepted the invitation only after some hesitation. It soon became clear that there was no prospect of agreement on an international double standard. The only outcome of the Conference was a perfectly empty resolution to the effect that the money functions of silver were to be conserved as those of gold were, but that the choice of one or other of these metals, or the simultaneous use of both, must necessarily depend on the special circumstances of each country.

After Germany in 1879 had put a stop to its sales of silver, a fresh attempt was made to bring about an international regulation of the currency question.

In 1881 the U.S.A. and France again issued invitations to a Conference to meet in Paris. This time Germany was represented by Freiherr von Thielmann, who later became Secretary of State for the Treasury.

The Conference met on the 19th April 1881. A number of States declared themselves in favour of bimetallism, but only on

condition that England and Germany participated. But both England and Germany gave no hope of anything more than possible slight concessions to silver, and at the same time declared definitely that they could not give up the principle of a gold standard. After fruitless discussions the Conference adjourned, in July 1881, until April 1882, in order that diplomatic negotiations between the various Cabinets might be undertaken. But when these too led to no results, the matter was quietly allowed to drop.

Subsequently the governments of England and Germany, regarded as the main stumbling-blocks, were subjected to strong bimetallic pressure, but again without success. Nevertheless, the U.S.A., forced by the continued debasement of their own currency, resulting from their silver legislation, which we shall discuss immediately, made, in the year 1891, a further attempt to persuade the European States to take joint action in favour of silver. At their invitation an International Conference met in Brussels in 1891, but its only result was to make even more clear than had previous similar conferences the absolute hopelessness of international bimetallism. This hopelessness soon led, as will be seen, to important consequences.

Even though these efforts to revive the free coinage of silver failed in their main purpose, they none the less succeeded in keeping the question open throughout the eighties, and they bore fruit in a few positive concessions of secondary importance.

Germany stopped selling its silver, less from a desire to improve the position of the metal than from a disinclination to incur the large losses which the sales entailed. But the agitation had at least this result, that it prevented Germany from resuming its sales, and left the world in doubt as to what the future of the German monetary system would be.

In most other countries, especially in those of the Latin Union, the bimetallic agitation succeeded in preventing any action going beyond the suspension of the free coinage of silver. In particular, it prevented the disposal of superfluous supplies of silver.

Positive successes were gained by the movement in the country of its real origin, the United States, which, because of its important silver mines, was the most interested in a rise in, and stabilisation of, the value of silver. The so-called Bland Act of the 28th February 1878 directed the Treasury to purchase every month a quantity of silver of 2 to 4 million dollars in value, and to coin it into standard dollars with full legal tender power. The Bland Bill remained in force up to 1890. During the period of its operation about 9 million kg. of silver of the value of more than 300 million dollars were coined into standard dollars. By the Sherman Bill of the 14th July 1890, the Treasury purchases of silver were considerably increased. The normal monthly purchases

were fixed at a figure of $4\frac{1}{2}$ million ounces of fine silver. The Treasury was to issue Treasury notes against this silver, which was to be stored for the most part unmined. The Sherman Act continued in force until the summer of 1893. Whilst it lasted the Treasury bought, at a price of about 156 million dollars, $5\frac{1}{4}$ million kg. of silver, considerably more than one-third of the contemporary world production of silver.

The various factors outlined above, the diminished output of gold, its unfavourable distribution, and the political movement in favour of silver, all combined to prevent during the period 1879-1893 any further decisive developments to the detriment of silver in international currency matters. The countries which in the seventies had gone over to the gold standard, or at least to gold currencies, retained considerable stocks of silver legal tender coins. Germany had thus in the year 1879 about 475 million marks in talers, the Latin Union about 3 milliard francs in 5-franc pieces, and Holland its entire stock of silver gulden. Austria-Hungary undertook, even after the suspension of the free coinage of silver in 1879, the coinage of substantial quantities of silver on government account. Spain coined between 1876 and 1892 a quantity of silver 5-peseta pieces to the value of 640 million francs. In India, year after year, silver to the value of 130 to 140 million marks was coined. Last of all, there were the enormous silver purchases and coinages by the U.S.A. Taking it all in all, in the two decades 1873-1893 considerably larger quantities of silver were coined per annum than in any previous period. Only in the European continental countries was there any substantial restriction in the use of silver for monetary purposes. Lexis¹ estimates the coinage of silver in Europe (on the basis of the old price of silver), the United States, and India to have amounted to:—

1851-1860	.	.	.	163 million marks.
1861-1870	.	.	.	340 " "
1887-1891	.	.	.	479 " "

The last of these figures is exclusive of the considerable quantities of silver bullion put into stock in the United States under the provisions of the Sherman Act. The considerable silver imports of China, which consisted largely of Mexican dollars, are not included in any of the figures quoted above. In so far as it can be calculated, the aggregate coinage of silver amounted, according to Lexis, between 1873 and 1893, to 9800 million marks on the basis of the old ratios. About 400 million marks, representing recoinage of old German and Scandinavian

¹ Article "Silber und Silberwährung" in the *Handwörterbuch der Staatswissenschaften*, 3rd ed., vol. vii, p. 517.

token money, have to be deducted from this amount, whilst, on the other hand, the quantities of silver bullion put into stock in the United States have to be added to it.

Notwithstanding the coinage of these enormous quantities of silver, and notwithstanding the fact that from the end of the seventies up to the year 1893 the nature of international standards underwent no change to the detriment of silver, the forces working for a recovery did not succeed in even arresting the process of further depreciation. The suspension of the German sales in May 1879 did not fulfil expectations. The coinage of silver ordered in the United States by the Bland Act of 1878 did not affect the price of the metal to any marked extent. Even the silver imports of India, which again began to rise in the early eighties, did not greatly impede the process of depreciation. The mean price of silver in London was 52 $\frac{9}{17}$ d. per ounce standard in 1878, and 51 $\frac{1}{4}$ d. in 1879. In 1880, mainly on account of the cessation of German sales, it rose to 52 $\frac{1}{4}$ d., but even so it scarcely reached the level of 1878. Then it went slowly down to 50 $\frac{3}{8}$ d. and 50 $\frac{3}{4}$ d. in 1883 and 1884, thus dropping below any figure reached during the reform of the German currency. From 1885 onwards, notwithstanding the American purchases and coinages, it made rapid strides downwards. The average price in 1889 was only 42 $\frac{1}{8}$ d., the lowest price of the year having been 42d. The tremendous increase in American purchases brought about by the Sherman Act resulted in the price soaring in August 1890 to 54 $\frac{5}{8}$ d. But this speculative rise did not last long. Already by November 1890 the price had sunk again to 47 $\frac{1}{8}$ d. In 1891 the lowest quotation was 43 $\frac{1}{2}$ d., and in 1892 it was 37 $\frac{7}{8}$ d. In the first half of 1893 the downward tendency continued further. Silver dropped to a much lower price than any reached before the Sherman Bill, and from 1879 the degree of depreciation had become greater by some 25 per cent., although the international currency arrangements had not during that period altered in any essential respect.

With the year 1893, in which the Sherman Act was repealed and the free coining of silver in India was suspended, a fresh collapse set in. By 1902 the mean ratio of value stood at about 1 : 39. From 1904 onwards the Russo-Japanese War and its consequences substantially increased the demand for silver, and its price recovered for a time to a not inconsiderable degree. But the year 1908 again showed a mean of 1 : 38·67, and in 1909 the ratio even went to 1 : 39·74. The years immediately following brought a slight recovery, which was, however, not sustained. By 1914 and 1915 the recovery was nullified, and the year 1915, with a mean ratio of 1 : 39·84, registered the most unfavourable position yet reached by silver.

The Great War revolutionised the market in the precious metals. From 1915 onwards silver rose on the London market by sensational jumps, which culminated in a price of 79½d. per ounce standard in the year 1919. This aspect will be dealt with in greater detail below.

¶ 3. The Causes of Silver Depreciation

The fact of the great depreciation of silver as against gold was noted in the course of the sketch given of the development of international currency organisation. No account was, however, given of the causes of this unprecedented disturbance in the ratio of value of the two precious metals. An outline of the historical development of the international conditions relating to the precious metals and to currencies would not, however, be complete without a discussion of the causes which brought about this enormous displacement in the ratio, and, in particular, of the connection between the depreciation of silver and the changes in currency legislation.

The view is widely held that the legislation, first in the seventies and later from 1893 onwards, was the sole cause of the depreciation of silver. Above all, the abolition of the double standard in France is thought to have been the first step towards making the collapse in the value of silver possible, and the credit for the considerable stability enjoyed by the ratio of value in the first seven decades of the nineteenth century is attributed solely to the French double standard. In such quarters the impetus to this fateful development is considered as given by the change in the German standard, which compelled, or at least influenced, the other civilised countries to turn from silver in like manner. The change in the German standard is regarded as the act of misguided doctrinaires, an arbitrary act which might just as well have been left undone. All the consequences resulting from this act are, in the view of these thinkers, governed by the rule that the curse of an evil action is that it must continue to engender more evil.

It must be admitted here and now that the restriction and absolute suspension of the free coinage of silver in a large number of civilised States did mean a considerably diminished field of employment for silver. This effect was particularly noticeable in the seventies before the Bland Act, and before the new increase in the Indian demand. Even the large expansion which later took place in America and Asia in the quantities of silver coined could not furnish a sufficient substitute for the reduced coinages of the European countries. Although the largest part of the freshly produced silver was put to monetary uses, this was only

possible in conjunction with a considerable fall in the price of silver, because the area then available, as compared with that before 1870, was geographically smaller and economically less important than the European areas.

At the same time we have seen that the very set-back in the price of silver was exactly the reason which brought about the restriction or complete cessation of silver coinage in a number of important countries, such as the Netherlands, the States of the Latin Union, and in Austria-Hungary.

The connection between the depreciation of silver and currency legislation is by no means one-sided. The exclusion of silver from the mints was not simply the cause of the depreciation of the metal, but frequently the result of it. There was, to a large extent, action and reaction, which those who regard the legislative changes as arbitrary acts, consider a vicious circle: legislation caused depreciation of silver, which in its turn brought about further legislation hostile to silver.

A study of the historical events will teach us whether in fact such a vicious circle did in reality control the developments in currency policy during the last five decades preceding the War.

We have seen that the currency conditions of the world were to a large extent stable during the first half of the nineteenth century. The Californian gold discoveries, with the disturbance which they brought in the circumstances of production of the precious metals, were the first to infuse new life into the process of development.

The new gold was readily accepted for monetary purposes by countries which had heretofore made the greatest use of silver. For economic progress had rendered desirable the increased employment of gold money. The increased production found its counterpart in increased demands for monetary purposes on the part of trade and in wider spheres of employment. That the countries on the double standard allowed without demur the new gold to force their silver coins out of circulation, and that the countries on a silver standard—above all, Germany—desired to obtain a gold circulation, was simply a consequence of the incontrovertible fact that for the largest part of modern commerce gold is much more convenient for money than silver. Increasing offers of a more useful medium of exchange have the necessary effect of reducing the demand for the less useful medium, and even of setting free certain supplies of the latter. In other words, the large increase in gold production must necessarily have restricted the requirements of trade for silver currency, and must have created a tendency towards depreciation of silver. How little this analysis is merely an argument *ex post facto* is shown by the fact that this view was already expressed before the

changes in currency legislation and the depreciation of silver had taken place. Soetbeer wrote on the 15th July 1869, in the *Hamburger Börsehalle*: "However paradoxical it may at first appear, it is to a large extent proved that, taking it on the whole and over a long period, the exceptional rise in the production of gold must have a larger effect on the price of silver than on the price of gold itself."

But what is the part played by currency legislation in these events, which result from general economic development and from the circumstances of production of the precious metals?

Currency legislation, as has already been explained in an earlier section in connection with the closing of the English mints to silver in the year 1798, is simply that instrument of our modern legal and economic machine by means of which the circulation of the currency is adjusted to the needs of economic intercourse. In England in the year 1798 the suspension of the free coinage of silver did not in any way artificially restrict the actual demand for silver. The action simply prevented the forcing of gold out of circulation through an influx of silver, a contingency which would have been against the interests of economic life. In the States of the European continent, after the gold discoveries had furnished the means for a regulation of the currency more in conformity with modern requirements, legislation had to step in wherever gold could not automatically take the place of silver, or wherever the gold circulation, once established, seemed later to be threatened again by silver.

So long as the large Indian demand in the fifties and sixties drew large quantities of silver from Europe, the transition from a silver to a gold circulation took a natural course in the countries on the double standard. The legislature had to step in, in so far as it was necessary for it to do so, in order to maintain the essential quantities of small silver token coins. On the whole, however, the bimetallic system acted in this case in a way which conformed to the desires and needs of commerce. Germany's need of a gold circulation, on the other hand, could only be satisfied by an abolition of the legally existing silver standard, and by the transition to the gold standard. The double standard countries, too, had—quite independently of any action by Germany—to introduce legislation as soon as the extraordinary silver demands of the East fell off and as soon as, concurrently, a large increase of silver production took place. As soon as these factors appeared on the horizon, the question had to be settled whether silver should regain that part of the area of monetary employment in Europe which it had forfeited to gold.

How little any actual economic need for further supplies of silver existed in Europe in those days was shown during the

seventies, particularly in Germany. The incident which threw this into relief was the fact that after the Bank of Prussia—that is, the Reichsbank—had begun paying in gold, German traders, etc., continually brought large amounts of silver coins to the Reichsbank to be exchanged for gold coins. From the middle of 1875 to the middle of 1879, German trade disposed of about 735 million marks of silver money to the Reichsbank and took out of it about 695 million marks of gold coin. In this case, in which commerce was unhampered and could provision itself in accordance with its requirements from the stock of metal at the central bank, it became obvious that not only was there no further commercial demand for silver, but that in fact the supply of silver in circulation exceeded the demand.

It was not simply a case of currency legislation forcing down the demand for silver and thus causing a decided depreciation of the white metal. The actual sequence was as follows:—

Gold is better suited to the needs of modern commerce, and is accordingly the more favoured of the two metals as a medium of currency. Increased supplies of gold thus easily found an outlet in a more widespread use of gold currency, and in turn substantially restricted the field of demand for silver currency in European countries. The silver circulation had now to be kept within the limits set by the altered demand, and this necessitated the suspension of the free coinage of silver and the transition to the gold standard. The force of circumstances was first felt in countries on the silver standard. In countries on the double standard it was felt as soon as the change in supply and demand on the silver market brought a flood of silver to their mints.

The factors, other than those connected with legislation, which at the end of the sixties and at the beginning of the seventies brought about the decided and fateful change on the silver market, were as follows:—

1. A rise in the production of silver from an average of 1.1 million kg. in the years 1861–1865 to 2 million kg. on an average of the years 1871–1875, and to 2.5 million kg. during the period 1876–1880.

2. A falling-off of the Indian silver demand from a figure of more than 100 million rupees on the average of the years 1855–1865 to one of about 71 million rupees for the years 1866–1869, and to an average of about 35 million rupees for the years 1870–1876.

These two factors combined, as will be seen from the statistical table on p. 192, in making available for European countries as from the middle of the sixties continually increasing quantities of silver.

Whereas from 1855 to 1860 India was absorbing considerably

more than the current production of silver, for the five years 1866-1870 the excess of production over the Indian demand jumped from 331,000 kg. to 1,642,000 kg. and 1,696,000 kg. for the two succeeding quinquennial periods.

Periods (Annual Averages).	Production of Silver. (Kg.)	Excess of Indian Imports of Silver over Exports.		Amount produced available after deduct- ing Indian Share. (Kg.)
		1000 Rupees.	(Kg. ¹)	
1856-1860	904,990	100,725	1,077,380	-172,390
1861-1865	1,101,150	99,680	1,066,100	35,050
1866-1870	1,339,085	94,290	1,008,450	330,635
1871-1875	1,969,425	30,631	327,600	1,641,825
1876-1880	2,450,252	70,542	754,440	1,695,812
1881-1885	2,808,400	60,806	650,330	2,158,070
1886-1890	3,387,532	96,351	1,030,500	2,357,032
1891-1895	4,901,333	96,600	1,158,661	3,742,672
1896-1900	5,154,551	64,800	1,004,398	4,150,153
1901-1905	5,226,121	113,600	1,991,426	3,234,695
1906-1910	6,135,348	236,969	2,523,736	3,611,612
1911-1915	6,312,831	103,916	911,406	5,401,425

The drop in the silver shipments to India was due to the fact that the causes of the extraordinary shipments in the fifties and sixties had ceased to operate. In the main, however, it was due to the rapid rate of increase of the gold payments which India had to make to England for interest on loans, payment of salaries, pensions, etc. These obligations, which were payable in England, used to be and are met by the sale on the London market of so-called *India Council Bills*, i.e. bills of exchange drawn in London by the India Council on the Indian Treasury, and made payable in Bombay, Calcutta, or Madras in Indian currency.

These Council bills or Treasury bills offered a more convenient medium for the settlement of debts due to India than did silver. Their transmission entailed much smaller charges and no loss of interest. They could be transmitted by cable, and were thus particularly useful in cases of sudden and great demand for money in India. Further, by their use losses resulting from fluctuations in the rates of exchange could be avoided. Silver and ordinary

¹ 93.5 rupees = 1 kg. of silver.

bills of exchange on India were always liable to such loss, in view of the long period of time between purchase in London and employment in India. For this reason, the large offers of Council bills and the rates at which they were issued had an important and often a decisive effect on the demand for and the price of silver.

It so happened that just during the critical period for silver, the issue of Council bills assumed very large proportions, as a result of the increasing indebtedness of India to England. Whilst the annual issue amounted during the fifties to 21·8 million rupees, the average during the second half of the sixties was 55·2 million rupees; from 1870 to 1875 it rose to 120 million, and between 1876 and 1880 it went up to more than 150 million rupees. At times, the sum total of these bills exceeded in value that of the entire English export of silver.

In this way, Council bills ousted silver more and more in the English transactions with India, as will be seen from the following figures:—

Average.	Excess of Indian Imports over Exports of Silver. (1000 Rupees.)	Issue of Council Bills. (1000 Rupees.)
1865-66—1869-70	94,290	55,200
1870-71—1874-75	30,631	120,840
	Decrease, 63,659	Increase, 65,640

The considerable decrease in the Indian demand for silver, and the simultaneous increase in the production of that metal, would of themselves have sufficed to force European countries, especially the countries of the Latin Union, which were on the double standard, to come to a decision as to whether they would allow silver to regain its dominant position in their circulation. Such a decision would become the more urgent should any important country exclude silver or throw any considerable part of its existing silver circulation on the market.

The reform of the German currency accelerated the decision; but it only accelerated the process of the development, and was not the development itself. By establishing the fact that currency legislation directed against silver was only a means by which the circulation of currency was moulded into a form suitable for commercial requirements, the question is really answered whether,

in considering the decisive legislative changes, we are dealing with arbitrary acts or with processes forced on by economic necessities. Thereby, too, we reduce to its proper modest proportions the question as to the part which the reform of the German currency and the abolition of the double standard in France played in the depreciation of silver. If the entire legislation directed against silver by European States is, taking it all in all, the result of a deep-seated universal cause, it is futile to concern oneself with the question of whether the one State or the other gave the actual first impetus to this process of development and contributed more than any other to the depreciation of silver.

Nevertheless, we ought perhaps to examine the effect on the depreciation of silver of two of the factors which entered into it, viz. (1) the abolition of the French double standard, and (2) the German currency reform.

The French double standard, it has been asserted, secured during its period of operation between 1803 and 1873 a stable ratio of value between gold and silver coins. It has also been asserted that only the abolition of free coinage of silver in the countries of the Latin Union had made silver depreciation at all possible.

It seems remarkable that particularly the French double standard should be credited with this effect. From 1717 to 1798 a double standard system existed in England, but although in those days England occupied a much more important position in international money matters and in the trade in precious metals than did France during the operation of its double standard, no one thought of ascribing to the English double standard a similar effect upon the ratio of value between the precious metals. The truth is that during the whole time the English double standard system lasted, the ratio of value in the open market was much more favourable to silver than the English statutory ratio. There can be no doubt of this. In this case, therefore, the system of the double standard did not have the effect ascribed to it. If, then, during the existence of the French double standard the market ratio corresponded to the legal ratio, the lesson to be drawn from the English double standard sufficed to show that the alleged effect was not necessarily a consequence of the system. Even the assertion that the French double standard stabilised the ratio of value between the two metals at 1 : 15.5 is not conclusive.

As has already been shown, the price of silver exhibited a downward tendency during the first half of the nineteenth century. In London the price per standard ounce of silver fell in 1848 as low as 58½d., corresponding to a ratio of value between silver and gold of 1 : 16.12. In the years when the output of gold rose, a movement in the opposite direction took place. The London

price of silver rose to 62.75d., corresponding to a ratio of value of 1 : 15.03, a divergence of $7\frac{1}{4}$ per cent.

It has been argued that these fluctuations on the London market arose only by reason of the cost of transport of gold and silver between London and Paris. Supposing the ratio between the metals in Paris had been in strict accordance with the legal ratio, then if silver had to be sent from London to Paris, its price on the London market should have been less by the amount of the transport charges. On the other hand, if London desired to draw silver from Paris, then the price in London should have exceeded that corresponding to the French ratio by the amount of the transport charges.

This line of argument would, however, only be justified if the ratio between the metals in Paris had in reality remained at 1 : 15.5. But this was not so. We are in possession of continuous quotations of the prices of gold and silver bars on the Paris market, and these quotations show fluctuations between 1 : 16.66 and 1 : 15.15. The fluctuations of the yearly averages were between the limits of 1 : 15.94 and 1 : 15.33. The annual averages were a little less divergent in Paris than in London, though the divergence of individual quotations was smaller in London than in Paris.

It is established that even in Paris fluctuations occurred round about the legal ratio, and were, in effect, roughly the same as those in London. The explanation that these fluctuations were due to transport charges inward and outward does not hold water.

But here is a peculiar fact. Under the French double standard not only did the unminted metal show a divergence from the legal ratio, but during the first half of the nineteenth century coined gold currency also showed a premium on its nominal value. The French double standard law thus did not even succeed in preventing fluctuations in the ratios between the French gold and silver coins. It is, therefore, scarcely arguable that it in any way dominated the ratio of value between the uncoined metals.

This established fact is in no way affected by the circumstance that the fluctuations in the ratio were kept within comparatively narrow limits. Just as there was a premium on gold bars of $6\frac{1}{2}$ per cent., and on gold 20-franc pieces of 12 per cent., so the deviation from the legal ratio could just as well have taken on much larger proportions, if any of the relevant factors had developed more strongly to the disadvantage of one or other of the metals.

Although we had to point out that the deviation from the French legal ratio had no relation to the extraordinary disturbance in the production of precious metals brought about by the discoveries of gold during the fifties, yet it has nevertheless to be

admitted that the operation of the French double standard in reality considerably mitigated the effects of that disturbance on the ratio of value. But this mitigating effect was made possible by the existence of certain specific conditions, which have already been defined above, in connection with the outline given of the history of the French double standard. These conditions were that the French circulation was entirely filled with silver when the enormous rise in the production of gold and in the demand for silver by India took place, and that, further, the transition from a silver to a gold circulation conformed to the needs of economic intercourse.

When, at the beginning of the seventies, a new change took place in the ratio of value, the first of the above conditions still operated. France and the other countries of the Latin Union had a very large stock of the metal, which was rising in relative value. In these circumstances the French double standard was again in a position to put at the disposal of the world market large quantities of the metal which was rising in value, and to take up the metal which was falling, thereby counteracting the forces which were making for a change in the ratio. How long the French double standard would have been in a position to retard the depreciation of silver in the face of the tremendous increase in the production of that metal, and in the face of the other factors tending towards depreciation, is another question.

But the second condition, which operated during the changed circumstances of the fifties, no longer existed. The operation of the double standard would not now have given to the countries of the Union a more convenient currency medium, but it would have supplied them with the less convenient silver in place of the more convenient gold. In the fifties it entailed no sacrifice on the part of France to allow its double standard system to counteract the factors which were changing the ratios of value. The automatic working of the system even brought about an improvement in the country's own circulation. At the beginning of the seventies, however, in order to ensure similar effects by their double standard, the countries of the Latin Union would have had to give up their gold circulation, and they were not prepared to pay this price in order to gain stability in the ratio of value between the metals. Currency legislation and the needs of commerce came into conflict here, and as commerce does not exist for legislation, but legislation for commerce, it was a foregone conclusion that the needs of commerce would win the day. The double standard was abolished by the suspension of the free coinage of silver.

The position occupied by the reform of the German currency in the currency legislation of those days and its share in the depreciation of silver, are thus to some extent explained. The theory

that the German change of standard was the cause of the abolition by France of her double standard, is in conflict with the view expressed in the same quarters that the continued existence of the French double standard would have prevented depreciation of silver. For the retention of the double standard could only have become impossible by an extensive deviation between the actual and the legal ratio of value—in the case in point, by a considerable depreciation of silver, which, on the theory referred to, could not have taken place at all as long as the double standard existed. It could thus never have been produced by the reform of the German currency.

Neither can the allegation that France had to defend herself against the silver which Germany was throwing on the market be substantiated. Germany first began to dispose of her silver in October 1873, when the restriction of the free coinage of silver in France and Belgium had already been effected. Further, France and the other countries of the Latin Union would only have been driven to defend themselves against the German silver if they had desired not to increase their silver circulation at all; that is, if such a difference had existed between silver and gold as would have nullified the theory of bimetallism. If, however, the Union desired to keep silver away, and to secure for itself a circulation of gold, then, quite apart from the German currency reform, it must necessarily have had recourse to the suspension of the free coinage of silver, because of the rise in the production of silver and of the falling off in the Indian demand, although the necessity for this step might perhaps have been deferred for a few years.

The argument that the German change of standard was the reason for the suspension of the coinage of silver in the other countries is a case of reversing cause and effect, both as regards the attitude of the Latin Union, as well as in connection with the measures against silver which followed the German reform. The question of a standard had been openly discussed in all countries for years before the German reform. In the entire civilised world the view had come to be accepted that the gold standard, where it actually existed, should be legally protected, and where it did not exist should be introduced. Circumstances caused Germany to be the first country to begin this process of transfer, and to secure for herself relatively favourable conditions on that account. That the other countries followed Germany's example was simply a confirmation of the correctness of the German view, leading her to adopt the gold standard.

A more far-reaching cause of the so-called "demonetisation" and depreciation of silver is to be sought in the verdict of the

commercial world as regards the utility of silver as a monetary medium. When, on account of their special suitability for the purpose, the two metals had been set apart from the numerous commodities functioning as money; when gold and silver for thousands of years had performed the functions of money side by side, it took but a short time for the more convenient of the two metals to force the less convenient out of circulation, the more so as increased production suddenly placed at the disposal of the civilised world so much larger quantities of the more convenient metal.

The restriction, in conformity with the needs of commerce, of the use of silver in the whole circulation, was, as has already been shown in the first section of this book, the primary condition for the establishment of a uniform monetary system. Only if the issues of silver coins were restricted would it be possible to assign to silver money a value independent of its own substance and derived from gold, thereby connecting in a practical form the values of the two metals. Thus the expansion of the gold standard and the restriction of the coining of silver have met the requirements of modern economic intercourse in two important respects.

¶ 4. Developments in Currency Policy from 1893 to the Great War

The apparently ceaseless depreciation of silver combined with a fresh rise in the production of gold during the last decades of the nineteenth century called forth a second series of currency measures. These measures appear to be but a sequel to the radical changes of the seventies.

As the depreciation of silver progressed, so the chance of rehabilitating silver faded away. The belief of the whole world that silver had definitely ceased to play an equal part with gold in currency and that the currencies of the most important trading communities could be equated to each other only on the basis of gold was strengthened. This view influenced to a vital extent the policies even of Asiatic States, such as India and Japan, in whose internal arrangements silver was far more utilisable than gold.

The rise in the output of gold, which began in the middle of the eighties, assumed proportions from 1890 onwards which left anything previously known far behind, even during the Californian and Australian periods. From a figure of 415 million gold marks in the year 1883 the output of gold rose in 1890 to about 500 million gold marks. In the year 1895 it had reached 834 million gold marks, in 1899 it was valued at 1287 million

gold marks, representing a weight in gold of about 461,000 kg., and in the year 1913 it reached a total of 768,000 kg. of a value in round figures of 2143 million gold marks. In the ten years 1851-1860 the average annual production of gold amounted to about 560 million gold marks of a weight of 200,000 kg. At that time the value of the average annual production of gold and silver was together about 720 million gold marks. The gold production of 1913 was thus nearly four times as great as it was at the height of the Californian and Australian periods, and in value it was three times as great as that of the total of gold and silver then produced.

From the beginning of 1891 to the end of 1900 about 8.9 milliard marks of gold were produced, in the thirteen years from 1901 to 1913 about 22 milliards, whereas in the two decades 1871-1890 the output was not quite 10 milliards. The world's stock of gold for monetary purposes was estimated to have been about 15 milliard marks in the year 1890. Out of the new production, about 300 million marks per annum during the decade 1891-1900 were used industrially. During that decade the amounts which remained available for monetary purposes were valued in round figures at 6 milliard marks. Thus, the world's stock of gold for monetary purposes was increased from 15 to more than 21 milliards of marks, *i.e.* by about one-half, within the ten years 1890-1900.

For the later years up to the outbreak of the War, the increasing industrial use of gold may be estimated at about 500 million marks on an annual average. That is, in the thirteen years 1900-1913 about 6.5 milliard marks of gold would have been used industrially. As at that time new supplies of gold, amounting to 22 milliard marks, became available, the world's stock of gold for monetary purposes must have been raised by a further 15.5 milliard marks; that is, to 36.5 milliard marks.¹

As had happened on the occasion of the large discoveries of gold in the fifties, so now also, the enormous increase in the supply of gold brought with it a large extension of its employment for currency purposes. The increased output of gold made possible, in conjunction with the improvement in the financial position of large economic areas, the transition to the gold standard, or at all events to an organisation of currency very closely allied to a gold standard system. This transition appeared all the more urgent in view of the continued depreciation of silver.

Austria-Hungary and Russia considered the question of introducing the gold standard, and to this end they accumulated in

¹ The Director of the American Mint does actually, on the basis of estimates of the several countries, estimate the gold reserves of the world for money purposes in the year 1913 as 36.5 milliards of marks. Cf. p. 207.

their Treasuries and central banking institutions a large proportion of the new gold. Russia alone registered from 1891 to 1899 an excess of imports over exports of gold to the value of about 1.8 milliard marks. During the same period Russia's own production of gold amounted to about 930 million marks. Austria-Hungary's net imports of gold from 1891 to 1900 were valued at about 530 million marks. Russia's transition to the gold standard was effected, step by step, by a series of administrative orders of the Ministry of Finance and by statute. The process commenced in 1894 and was concluded with the law of the 7th to the 19th June 1899. In Austria-Hungary the gold standard was accepted in principle by a law of the 2nd August 1892, but the Austro-Hungarian Bank never undertook the obligation of cash payments, and the system was accordingly never completely carried into effect.

Silver depreciation had a direct influence upon the legislative measures taken in India, Japan, and the U.S.A. in connection with currency matters.

India has to make every year large payments in gold, partly as interest on loans, partly as salaries and pensions to Anglo-Indian officials, etc. The Council bills issued for this purpose from 1890 onwards amounted to about 16 million pounds sterling per annum. As India's revenue was in silver, in proportion as this metal depreciated, an ever larger part of the revenue was swallowed up by expenses incurred in gold. If only, therefore, in order to avoid the breakdown of Indian finances, a fixed relation between Indian money and the English gold standard became necessary. For this it was imperative to make the value of the Indian unit of currency, the rupee, independent of the depreciating silver. After the Brussels Monetary Conference had made it clear that there was no prospect of international joint action being taken to raise and stabilise the value of silver, India took, on the 26th June 1893, the decisive step of suspending the free coinage of that metal. The aim was to stabilise the rate of exchange of the rupee at 16d. in English money, and this aim was achieved in a few years by the closing of the mints to silver, although the value of the silver in the rupee went down to 12d. and even lower. India gradually accumulated a considerable store of gold intended to keep up the value assigned to the rupee in terms of gold. By a law of the 15th September 1899 the English principal gold coin, the sovereign, was given the legal tender value of 15 rupees, corresponding to a rupee value of 16d. Thus India adopted a "limping gold standard" with a strongly predominating circulation of silver. But the circulation of silver could no longer be increased at will, and the value of the currency was freed from dependence on its silver content and was placed in relation to a definite quantity of

gold. From 1896 onwards the imports of gold into India increased considerably. The excess over exports, including India's own production of gold, amounted in the decade 1896-1905 to about 1135 million marks in value.

Japan undertook a reform of its monetary system as soon as her war with China had been concluded. She used the war indemnity paid by China to procure the requisite supplies of gold to enable her to go over to the gold standard. The gold standard was introduced by a law of the 29th March 1897. When the law was passed, a part of the silver coinage in circulation was melted down and sold.

In the long run the U.S.A. saw the necessity of giving up their policy of favouring silver. This happened in 1893. The Brussels Conference of 1892 had broken up without coming to any result. The suspension of the Indian coinage of silver had produced another sharp drop in the price of silver. At the same time a panic arose as to what would be the fate of the American currency, which was swamped by silver. In the summer of 1893 Congress was summoned to an extraordinary session. At that session the repeal of the Sherman Act was decided upon. The years that followed witnessed an embittered fight between the parties which advocated a free coinage of silver and those who declared themselves in favour of the gold standard. The fight took its bitterest form during the Presidential election of November 1897, at which the candidate of the free silver interests, Bryan, was defeated by McKinley.

McKinley, who for reasons of internal politics wished to go some way to meet the adherents of silver, actually sent to Europe, after he entered into office in the year 1898, a Commission whose purpose it was to endeavour to reach an international agreement in favour of silver. In the meantime the agitation in favour of bimetallism had, after the tremendous collapse of silver in 1893, gained a new life in Europe and was taken up extensively, especially in Germany. Count Caprivi¹ appointed in 1894 a Commission "for the formulation of rules to raise and fix the value of silver," and on the 15th February 1895 the new Chancellor, Prince Hohenlohe, declared that he was negotiating with the federated governments in regard to the practicability of an interchange of views with foreign governments on the question of the standard. An inquiry by the German Chancellor whether London would be prepared to agree to the opening of the Indian mints to silver—a step in favour of silver—received, however, a negative reply. In view of this reply the Bundesrat decided on the 23rd January

¹ [Count Caprivi de Caprera de Montecuccoli succeeded Bismarck as Imperial Chancellor (1890-94). He was in turn followed in October 1894 by Prince Hohenlohe.]

1896 not to follow up the resolution of the Reichstag of February 1895, which demanded the summoning of an international currency conference. Soon after (on the 17th March 1896) the British government declared in the House of Commons that in the unanimous view of the Cabinet it was impossible for England to give up the gold standard, but that if any number of foreign countries were to reintroduce the free coinage of silver they would take into consideration the opening of the Indian mints to silver and that they would also consider the possibility of making some minor concessions to that metal.

This was the situation as it existed in the year 1898, when the American silver delegation arrived in Europe. They first turned to France, where they found the greatest willingness on the part of the Méline Cabinet to meet them as far as possible. The negotiations were continued in London, jointly with France. France, as well as the Union, declared itself ready to re-establish the free coinage of silver on the basis of the old ratio of value of 1 : 15.5, asserting at the same time the desirability of freeing the coinage of silver in all other States, including England. When England rejected this proposition point blank other proposals were made. The most important of these was the proposal to reopen the Indian mints to silver. England was also asked to accord to silver a wider sphere in its own circulation, and to agree to make annual purchases of silver of specified amounts.

The British Cabinet referred the question of the opening of the Indian mints to the Indian government. The latter gave its decision, in an explicit, complete, and reasoned document, against the re-establishment of the free coinage of silver. It was stated that the free coinage had been suspended so as to bring the rate of the rupee to 16d. and to fix it at that figure, and that this result had very nearly been reached. No reason was to be found in Indian conditions for repealing the regulation which had been so successful. A scheme of bimetallism, confined to France and the U.S.A., offered no sufficient security for stabilising the ratio of value, but, should the proposed experiment fail, the position of India would once more be very adversely affected. Over and above that, a rise in the price of silver, as sudden and extensive as was proposed by France and America, would have momentous results on the general economic organisation of India, and this after the Indian conditions had accommodated themselves to the circumstances of a low silver value.

This reply finally sealed the fate of the negotiations.

The movement in favour of reviving the free coinage of silver and an international double standard gradually flagged in the years that followed.

The U.S.A. accommodated themselves to the new conditions.

They took steps considerably to strengthen their supplies of gold, and, thanks to their favourable trade balance, they succeeded to a very large extent. Whereas every year from 1889 to 1896 net exports of gold were registered, there was in the three years from 1897 to 1899 a net import of gold of about 200 million dollars. Even though, taking it all in all, in the decade 1891-1900 the exports of gold exceeded the imports by about 270 million marks, these net exports were more than counterbalanced by the current production of gold in the States, valued at 2.1 milliard marks, so that in these ten years the reserves of gold in the U.S.A. can be taken as having increased by about 1.8 milliard marks. In the thirteen years from 1901 to 1913 the States gained balances of, in round figures, 360 million marks of gold, which, together with a native production of 4850 million marks, gave an increased supply of gold of 5210 million marks.

In legislative matters also, the U.S.A. appreciated the conclusions to be drawn from the world's currency policy. An Act of the 14th March 1900 formally proclaimed the gold dollar as a unit of currency of the U.S.A.

The complete change in the general situation manifested itself strongly in the international negotiations which took place in the year 1903—this time also at the instance of the U.S.A.

An Act of the 3rd March 1903 set up in the U.S.A. a Commission which the governments of Mexico and China requested should concern itself with the question of "bringing about a fixed relationship between the monies of the gold standard countries and the present silver-using countries."

The programme of this Commission is thus seen to contain nothing in regard to the raising or stabilisation of the value of silver. Silver and its fate now took a back place as compared with the question of stabilising the rate of exchange between the gold standard countries and the still remaining silver-using countries.

Fluctuations in the exchanges between the currencies of gold and silver-using countries had played an important part even in the previous decades during the controversies over the question of the standards, and at the conferences which concerned themselves with the questions of re-establishing the value of silver and with bimetallism, but there was this difference. In those days the only means of avoiding fluctuations in rates of exchange were thought to be the stabilising of the ratio between silver and gold, which could only be effected by international bimetallism. Now, however, stabilisation of the value of silver and bimetallism were given up of set intention.

In the meantime, the fact that stability between the rates of exchange of gold and silver-using countries could even so be effected, had been taught in a most decided fashion by the example of India.

The American Commission, together with a Mexican Commission, visited the cities of Paris, London, the Hague, Berlin, and St Petersburg, and in these places negotiated, in collaboration with diplomatic representatives of China (that country having entrusted the safeguarding of its interests to the United States), with the representatives appointed by the respective governments. The Commission was more concerned with obtaining clear ideas on the question by an interchange of views with the experts of the various countries than with coming to decisions of direct practical importance. In particular, the American and Mexican members everywhere explicitly refused to attempt to persuade the gold standard countries to any changes in their legislation in favour of silver, or to the purchase of silver over and above their real requirements. The discussions resulted in the general recognition of the practicability of stabilising on a gold basis the exchanges of countries with a silver circulation. In regard also to the means by which this end could be reached and permanently secured, it was agreed that the coining of silver legal tender money should be restricted, and that, wherever possible, a gold reserve should be created, fed from the profits of the coinage of silver, for the purpose of preserving the rates of exchange from fluctuations caused by temporarily unfavourable balances. It was also clear that in the large and important Chinese Empire the solution of the problem presented particular difficulties, as, in that country, an actual circulation of currency had still to be created.¹

From these negotiations Mexico drew conclusions which were immediately put into practice. By a law of the 9th December 1904, enforced by a decree of the 25th March 1905, the Mexican monetary system, while retaining silver legal tender money, was reorganised on the gold basis. The gold peso, containing $\frac{3}{4}$ gr. of fine gold (exactly the same quantity as the Japanese gold yen), was declared the unit of account of the system. The ratio of value between gold and silver used as a basis for the coinage was 1 : 32.6, which corresponded to a silver price on the London market of 28.44d. New silver coins might be coined and issued only against delivery of gold. To safeguard gold parity, which was steadily kept in view, a gold reserve was created, which was increased by the profits from the coinage of silver.

¹ Cf. "Report on the Introduction of the Gold Exchange Standard into China and other Silver-Issuing Countries," *Documents of the American House of Representatives*, 1903, No. 144.

Already, in the year 1903, the U.S.A. had organised the monetary system of the Philippines on a similar basis. Reforms of the same nature were carried out in the Straits Settlements and in a few other colonial countries.

The temporary rise in the price of silver during the years 1906 and 1907 brought certain inconvenient consequences for these countries, as well as for Japan. The standard upon which the silver money was coined in these areas corresponded throughout to the London price of silver of about 29d. When, on the conclusion of the Russo-Japanese War, the demand for silver from Eastern Asia increased by leaps and bounds, and the price of silver rose to 33d., silver began to vanish from the countries with the new gold currency, just as it had previously vanished in the fifties of the preceding century from France and from other countries of the Latin Union. Steps were taken to counteract this. Mexico introduced an export duty of 10 per cent. on the nominal value of its silver coins. Japan reduced the fineness of its silver token coins by 25 per cent. A similar reduction in the contents of their coins was made by the Straits, even in the case of their silver legal tender coins, after they had raised the sovereign to full legal tender status, with a fixed rate of exchange.

A survey of all these changes and of similar changes in a number of smaller countries shows clearly that the gold standard and the employment of gold currency underwent, in the course of the two decades 1890-1910, an expansion which is comparable with the events of the seventies of the preceding century. Here, as there, the enormous increase in gold supplies made it possible to employ this metal much more widely. International currency organisation had thus, before the outbreak of the War, been almost completely consolidated on the basis of gold.

In regard to the actual conditions of the currencies circulating in the individual countries just before the outbreak of the War, information is given in the following statistical table, which has been worked out from the estimates of the Director of the American Mint.

[TABLE.]

*World Stocks of Precious Metals available for Money Purposes
on 31st December 1913*

Country.	Gold.	Silver.	Per Head of Population.		
			Gold.	Silver.	Total.
	(Million Marks.)		(Marks.)		
Germany . . .	3,820.0	1,150.0	56.8	17.1	73.9
England . . .	3,486.4	531.3	76.8	11.7	88.5
Austria-Hungary . .	1,244.5	524.2	24.9	10.5	35.4
Russia . . .	4,248.3	331.0	25.9	2.0	27.9
Finland . . .	52.7	11.5	17.0	3.7	20.7
Netherlands . . .	255.8	118.4	42.6	19.7	62.3
Portugal . . .	310.1	139.0	51.7	23.2	74.9
Turkey . . .	598.1	110.9	25.1	4.7	29.8
Denmark . . .	170.0	31.5	60.7	11.3	72.0
Norway . . .	109.2	17.2	45.5	7.2	52.7
Sweden . . .	115.5	6.3	20.6	1.1	21.7
France . . .	5,040.0	1,726.6	127.3	43.6	170.9
Belgium . . .	287.7	171.3	38.4	22.7	61.1
Italy . . .	1,115.1	101.1	31.9	2.9	34.8
Switzerland . . .	184.0	64.7	49.7	17.5	67.2
Greece . . .	133.6	12.6	44.5	4.2	48.7
Spain . . .	388.5	986.2	19.8	50.3	70.1
Bulgaria . . .	41.2	20.2	9.4	4.6	14.0
Rumania . . .	177.2	63.4	24.3	8.7	33.0
Serbia . . .	50.4	3.4	17.4	1.2	18.6
Europe . . .	21,828.3	6,120.8	43.7	12.3	56.0
U.S.A. . .	7,999.7	3,120.8	81.5	31.8	113.3
Canada . . .	598.5	551.0	83.1	76.5	159.6
Argentina . . .	1,228.9	39.5	170.7	5.5	176.2
Bolivia . . .	33.6	2.9	14.6	1.3	15.9
Brazil . . .	378.4	105.0	16.4	4.5	20.9
Chile . . .	2.1	35.7	0.6	10.5	11.1
Ecuador . . .	20.2	5.9	13.5	3.9	17.4
Guiana (British) . .	3.8	4.2	12.7	14.0	26.7
„ (Dutch) . . .	0.4	0.8	4.0	8.0	12.0
Colombia . . .	16.8	16.8	3.2	3.2	6.4
Paraguay . . .	7.1	..	8.9	..	8.9
Peru . . .	84.0	10.1	18.7	2.2	20.9
Uruguay . . .	62.2	18.1	51.8	15.1	66.9
Venezuela . . .	7.6	3.8	2.8	1.4	4.2
Cuba . . .	126.0	2.1	57.3	0.9	58.2
Haiti . . .	8.2	..	4.1	..	4.1
Mexico . . .	131.0	235.2	8.7	15.6	24.3
Central America . .	8.4	49.1	4.7	27.3	32.0
America . . .	10,716.9	4,201.0	59.9	23.5	83.4

*World Stocks of Precious Metals available for Money Purposes
on 31st December 1913—continued*

Country.	Gold.	Silver.	Per Head of Population.		
			Gold.	Silver.	Total
	(Million Marks.)	(Marks.)			
Egypt	803.5	76.0	71.1	6.7	77.8
South Africa	63.0	11.3	10.5	1.9	12.4
Africa	866.5	87.3	50.1	5.0	55.1
Australia	909.3	42.0	189.4	8.8	198.2
Japan	548.8	299.4	10.4	5.6	16.0
Corea	7.1	14.3	0.5	1.1	1.6
India	1,570.8	3,759.0	6.4	15.4	21.8
Siam	0.4	186.9	0.1	23.1	23.2
Straits	5.0	29.4	2.5	14.7	17.2
Asia	2,231.1	4,289.0	6.6	13.4	20.0
Total	36,453.1	14,740.1	35.7	14.4	50.1

CHAPTER VII

DEVELOPMENTS SINCE THE OUTBREAK OF THE GREAT WAR

¶ 1. Disturbances produced by the Great War in Monetary Institutions

THE currency organisation of the civilised world developed during the four decades of European peace, to an extent commensurate with the unexampled contemporary economic progress throughout the world and the equally unexampled extension of international economic relations. This process of development consolidated the monetary institutions of the different countries, and at the same time brought such security and stability in the relations between the various systems that, without the intervention of any connecting links, they presented an orderly and well-established international whole, resting on the common basis of the gold standard. This international monetary machine was an integral part of the entire economic system, which functioned and continued in existence because of it, while at the same time the machine's own working and continued existence depended on the undisturbed functioning of the economic system of the world.

The Great War convulsed all the individual national economic arrangements and disorganised the economic machine of the world. It revolutionised the financial, political, and social conditions of individual countries and of the world at large, and radically changed the working of the monetary machine, replacing its existing order and peaceful development by disturbances of a magnitude hitherto unknown.

All the belligerent countries found it necessary to place their financial, as well as their entire economic, machinery at the service of war. The neutrals also found it necessary to take decisive monetary measures as their financial and economic foreign relations were immediately affected by the War, and the longer the War lasted, and the more it extended, the more were they drawn into the sphere of its influence.

¶ 2. The Problem of Protecting and Strengthening the Gold Reserves of Nations

Everywhere it became urgently necessary to take steps for the *protection of the national reserves of gold*.

An immediate consequence of the outbreak of war was that credit was everywhere shaken. In the external relations of countries this was felt even more than in their internal intercourse. Credit and offset gave way, to a large extent, to cash transactions,

and cash transactions with the outside world meant payment in actual gold. It is true that the War considerably restricted the foreign trade of belligerent countries, in particular that of the Central Powers, whose sea communications were cut off. But the upkeep of that part of foreign trade concerned with the importation of foodstuffs, of raw materials, and of other commodities important for war and life in general, became a question of life and death. And as a most elementary precautionary measure, it was necessary to make calculations on the assumption that these imports would, to a large degree, have to be paid for in gold. The tangible national reserves of gold had therefore to be set aside and, as far as possible, strengthened. This necessity collided with the principle of convertibility into gold of paper money and of token coins, and the principle of convertibility went everywhere overboard.

The steps taken for the preservation of the national gold reserves differed in form in the various countries. In some the convertibility of ordinary currency into gold coins was suspended by law. In others it was thought sufficient to effect the same result by administrative action.

In Germany, immediately after the outbreak of war, a whole series of economic and financial emergency laws and regulations was issued on the 4th August 1914. These, having been prepared after the experience gained in the War of 1870-71, and with due regard to observations made in subsequent wars, were ready for issue, in the event of war, for the purpose of financial mobilisation.

The first step was the freeing of the Reichsbank from its obligation to exchange its bank notes for gold currency upon demand. The Imperial Treasury was similarly freed from its obligation of converting Imperial Treasury notes. These latter were made—so that their circulation should not suffer by their inconvertibility—legal tender currency. In the case of the notes of the Reichsbank this had already been done by the Order of the 1st June 1909. At the same time it was provided (cap. 2 of the Currency Law) that when silver, nickel, and copper token coins were called in, Treasury notes and Reichsbank notes could be given in exchange for them instead of Imperial gold coins.

The suspension of convertibility of Treasury notes, bank notes, and token coins was later supplemented by the prohibition of trading in gold, and in particular of the export of gold. On the 23rd November 1914, the Bundesrat issued an order prohibiting the giving of a premium on Imperial gold coins. On the 13th November 1915, the export and transit of gold was forbidden, also by order of the Bundesrat. In point of fact the export of gold was, from the very beginning of the War, stopped by administrative action.

Side by side with these protective measures, steps were taken to increase the gold reserve of the Reichsbank, which reserve could be used for war purposes—by attracting to it the gold coins with which the circulation was fully filled, and finally, by diverting to it as far as possible gold privately owned in the form of ornaments.

Already in the years before the War the Reichsbank had pursued a regular policy of concentrating in its vaults as much of Germany's gold reserves as possible. This policy had been dictated by the correct view that, in times of economic crisis and political complications, a given quantity of gold concentrated in the central note-issuing bank was a much more potent instrument than a similar quantity widely distributed. To some extent the transfer of gold from circulation into the Reichsbank had been encouraged by the law, already mentioned (p. 166), of the 20th February 1906, which empowered the bank to issue small notes of denominations of 50 and 20 marks. This policy had a marked success even before the War. The average gold reserve of the Reichsbank in 1900 was 570.7 million marks. This was not substantially more than the 513.6 million marks of 1890. In 1910, however, the reserve averaged 777.8 millions, and in 1913 as much as 1067.6 million marks. In the first half of 1914 this favourable development continued at an accelerated pace, with the result that—notwithstanding the large withdrawals of gold (caused by war panic) which took place in the last week of July—the reserve stood on the 31st July 1914 at 1253.2 million marks.

Immediately after the outbreak of war, the Imperial War Treasury, consisting of Imperial gold coins to the value of 120 million marks and kept for such an eventuality, was transferred to the Reichsbank, as was also the further amount of 85 million marks obtained by that time by the increase—made possible by a law of the 3rd July 1913—of Treasury notes from 120 to 240 million marks. The gold reserve of the Reichsbank was thus increased, in round figures, to roughly 1460 million marks in the first days of the War.

A still more considerable increase in the gold reserve of the Reichsbank resulted from the successful appeal to the patriotic spirit of the people. It will ever redound to the credit of the German nation that, abandoning all self-interest, it willingly gave up its gold to help the "Fatherland." The proceeds of this appeal were so large that already on the 7th December 1914 the gold reserve of the Reichsbank exceeded 2 milliard marks and reached on the 31st December 1914 a total of 2092.8 million marks. This meant that in five months there was a net increase of 630 million marks. The actual proceeds from the stream of private gold were even larger, for over and above the 630 million

marks, these proceeds had been utilised for the big payments made to foreign countries for war supplies of all kinds.

In the War years that followed, by dint of energetic and well-directed propaganda, the flow of gold to the Reichsbank from private pockets and from commerce was kept up, though it gradually began to diminish in volume. By the end of 1915 the gold reserve of the Bank had risen to 2445 million marks. It rose further to 2520 million marks by the end of 1916, and reached its maximum on the 15th July 1917 at a figure of 2533.3 million marks. It was then 1073 million marks more than it had been at the beginning of the War, after it had been swollen by the treasure of Spandau¹ and the Reich's gold reserve. This increase of more than a milliard of marks was effected in an uninterrupted and steady stream, notwithstanding that the Reichsbank was throughout this time releasing many hundreds of millions of marks for the financing of imports of foodstuffs and war material.

By the middle of 1917 the free gold reserves had been so far exhausted that the inflow to the Reichsbank no longer covered the ever-growing demand for gold for foreign payments. The gold reserve of the Reichsbank began slowly to diminish. At the end of 1917 it was 2407, at the end of June 1918 still 2346 million marks, and although by the 7th November it had again jumped to 2550 million marks, this was only because of the Russian gold handed over by the Russian government to the German government under the Peace Treaty of Brest Litovsk. This Russian gold had, however, under Art. XIX of the Armistice Agreement, to be handed over to the Entente. The year 1918 closed with a Reichsbank gold reserve of 2262 million marks, which was still more than double the average for the year 1913.

Similar measures for the preservation and strengthening of their tangible gold reserves were taken by the other belligerent countries and by many neutral States.

As far as defensive measures against attacks on the gold reserve of the central note-issuing banks are concerned, an explicit and statutory suspension of convertibility of bank notes, etc.—such as took place in Germany and France—was not everywhere adopted. England, in particular, did not have recourse to such direct legislative action, but obtained the same results by practical measures. The control which the State and the Bank of England had over the business world, coupled with national discipline, proved sufficient for the actual prevention of withdrawals of money from the Bank of England.

¹ [A sum of £6,000,000 in gold was reserved from the war indemnity paid by France after the War of 1870-71 and kept in the Julius tower, which is surrounded by water, at Spandau as a "Reichskriegsschatz," an Imperial war treasure, in readiness for any war emergency.]

Any Englishman who, against the wishes of the government and of the Bank of England, had insisted upon his rights, and presented bank notes for conversion into gold coin, would have absolutely sealed his fate as a business man and as a member of the community. The Bank of England could refuse to redeem its notes or to pay out gold to its creditors without having to justify its action formally and without fear of anyone taking legal proceedings against it.

The threat of business and social ostracism against all who, in defiance of the national will and public interest, might have attempted to withdraw gold from the Bank of England was—and continues to this day to be—just as effective in practice as a statutory suspension of gold payments by the Bank. It is, in fact, still more so, as immediately after the outbreak of war England too issued a prohibition on the export of gold.¹

It is true that just after the outbreak of war there was a certain amount of panic in the British world of finance, instanced by the "run" which ensued on the Bank of England. In the few days from the 22nd July to the 7th August 1914 the Bank's gold reserves dwindled from 38.6 to 26 million pounds sterling. The raising of the bank-rate from 3 per cent. to 10 per cent. proved useless. In order to prevent a complete collapse, the drastic step was taken of closing all banks completely until the morning of the 7th August. In the interval, the government obtained statutory powers for suspending the Bank Act and for the issue of paper money ("Currency Notes"), and, by the proclamation of a moratorium and other measures, the panic was allayed. When, on the 7th August, the Bank of England again opened its doors it was in a position to refuse the demand for gold on the grounds indicated above, even without statutory suspension of the convertibility of its notes.

The countries at war with Germany found it easier to procure the gold necessary for strengthening the national reserves, because they were not cut off from the oversea gold-producing areas. They were not, therefore, obliged to rely exclusively upon home sources of supply—that is, on the gold privately owned and such as was circulating as currency. Nevertheless, Germany's opponents did not fail to organise propaganda for the transfer of gold from private individuals to the central bank. France, in particular, met with considerable success. During the War 2½ milliard francs of gold in round figures were transferred in this way to the Bank of France. The reports of the Bank of France, just as those of the Reichsbank, do not fully give the results of this inflow of gold. For France also had to make considerable

¹ The prohibition of the export of gold except under licence was given legislative form by the Gold and Silver Export Prohibition Act of 1920.

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foreign payments from its national gold reserve, although for this purpose it had at its disposal much larger credits than Germany, particularly those granted to it by England and the United States.

In order to secure those foreign credits the French government found it necessary to cause the Bank of France to transfer a large part of its gold reserve abroad, especially to the Bank of England, and to give it in pledge. The developments in the gold reserve in the Bank of France during the War were as follows:—

Gold Reserves of the Bank of France

(In Million Marks.)

	In the Country.	Abroad.	Total.
30th July 1914	4,141	..	4,141
At end of 1914	3,900	..	3,900
„ „ 1915	5,015	..	5,015
„ „ 1916	3,383	1,693	5,076
„ „ 1917	3,314	2,037	5,351
„ „ 1918	3,449	2,037	5,486

The concentration of gold in the note-issuing bank thus took place in France later than in Germany. The year 1914 shows, from the time of the outbreak of war, a drop in the gold reserves of the Bank. Results of any magnitude were only obtained in the year 1915. Apart from the total deliveries to the Bank, considerable quantities had to be sent abroad in part as payment for goods, and in part as temporary security. The gold reserve of the Bank of France remaining in the country was at the end of 1918 about 600 million francs less than at the outbreak of the War.

The Bank of England had at its disposal more effective means for improving its gold reserve than any other note-issuing institution. The Bank was not restricted for its sources of supply to the gold in circulation, or to gold brought to it by individuals, but could draw upon the whole British Empire.

An increase of its gold reserve was made in the first weeks and months of the War not only by attracting supplies from the open market and by bringing in the by no means inconsiderable gold reserves of the deposit banks, but also by a series of special

measures. First and foremost, the Egyptian and Indian gold reserves, which were lying in England, were incorporated in the reserves of the Bank of England. Further, the Bank erected gold depots in Australia, South Africa, and Canada, in which were concentrated the gold supplies coming forward from new production, and in Canada also from payments made by the U.S.A., these new supplies being now reckoned as part of the gold reserves of the Bank of England. The result was that already by the beginning of December 1914 the Bank of England could register a gold reserve of more than 70 million pounds sterling (as contrasted with 26 million pounds sterling on the 7th August 1914).

The Bank was unable, however, to keep its reserve at this level. At the end of 1915 the reserve stood at about 50 million pounds sterling. A year later it was about 54, and was 59 million pounds sterling at the end of 1917. Only in the second half of 1918 did a fresh rise take place: the reserve reaching nearly 80 million pounds sterling at the end of the year.

In considering these developments there must be taken into account, on the one hand, the drastic means which England adopted to feed its gold reserve, and, on the other hand, the large amounts of gold which had to be sent abroad, especially to the United States, a course to which the Bank was compelled, in order to combat the depreciation of the sterling rate of exchange in terms of those of the United States and of the European neutrals. This policy of preventing the breakdown of the English currency demanded sacrifices in gold which were the greater because not only was England the financial backbone and the money dispenser of its Allies, but she was also to a large extent the "manufacturing partner," and thereby the centre for the import and working up of raw materials from all over the world for the war munitions of the whole Alliance.

The means adopted by England for the purpose of meeting these enormous demands were to commandeer for the Bank the gold output of South Africa and Australia, and also to put great pressure on the Allies, France and Russia especially, to undertake counter-services in return for the credits given by England. They also had to undertake to send to the Bank of England considerable parts of the gold reserves of their own central banks.

The "mobilisation of gold" was, of course, only possible in countries such as Germany, France, and England, which had a large internal circulation of gold, or were able to utilise their own sources of gold supply—as, for instance, England its colonial production, and Russia the production of the Urals and of Siberia. In the belligerent countries in which these conditions were non-existent, the reserves of the central banks

were doomed to visible dwindling. In Italy the dwindling of these reserves was to some extent counteracted by the credits of England and the U.S.A. The reserves of the Bank of Italy show, therefore, from 1913 to the end of 1918 a relatively modest drop from 1107 million to 820 million lire. Austria-Hungary had no such aid. Its ally, Germany, found her own position difficult enough. In the Danubian monarchy the reserve of the central bank was, at the end of 1915, at a figure of 685 million crowns, only a little more than half of what it had been at the outbreak of the War, when it stood at 1250 million crowns. At the end of 1917 it amounted to 265 million crowns.

¶ 3. Neutrals : From Protection of Gold to Protection Against Gold

From what has already been said, it is clear that procedure concerning gold was not confined to the mobilisation of the gold in free circulation in the belligerent countries, nor to its concentration in the central note-issuing banks, but that the employment of gold for the purchases of war materials and of the necessities of life must also have brought in its train an outflow of gold to neutral countries.

This process assumed very large dimensions.

Not at the beginning. At first those belligerent countries which were in free communication with foreign countries and had considerable foreign credits—particularly England, and to a lesser degree France—sought to turn their credits abroad into gold in order to strengthen their own gold position. This forced the neutral States to take measures for the protection of their gold reserves, and caused them, in part, to suspend the convertibility of their bank notes. Thus, in the case of Holland, an Act of the 3rd August 1914 empowered the Netherlands Bank to suspend the convertibility of its notes in the event of war or of danger of war. In Switzerland the National Bank was at the beginning of the War freed from its obligation of having to give metallic coin in exchange for its notes. The Scandinavian States followed this example. During the period immediately following the outbreak of war, the U.S.A. found themselves under the necessity of parting with large quantities of gold to Europe, especially to England.

But the demand of the belligerents for raw materials and other commodities soon grew, and the situation changed. The neutral countries became a most important source of supply for the belligerents, and unprecedented streams of gold were soon flowing to their central banks. The gold reserves of the Swiss National Bank, which at the end of 1913 amounted, in round figures, to 170 million

francs, reached by the end of 1916 the total of 345 million francs, and rose to 415 million francs by the end of 1918. The situation developed similarly in the case of the three Scandinavian central banks. The reserve of the Netherlands Bank rose from 151 million gulden at the end of 1913 to 588 million gulden at the end of 1916, and to 698 million gulden at the end of 1917. The Bank of Spain saw its gold reserve jump from 480 million pesetas at the end of 1913 to 1215 million pesetas at the end of 1916, and to 2228 million pesetas at the end of 1918. The Federal Reserve Banks of the United States of America, which only commenced their activities towards the end of 1914 and held a reserve of 229 million dollars at the end of that year, had at their disposal at the end of 1916 a reserve of 471 million dollars. Up to that time the increase was relatively small, in spite of the immense deliveries by the United States to the belligerent countries. This was due to the fact that England and France could in the early stages make use of their large holdings of American securities in payment. The year 1917, however, in which the U.S.A. themselves entered into the War, showed an increase in the reserve of the Federal Reserve Banks of 1200 million dollars, bringing the total to 1671 million dollars, and in the following year a further rise was registered up to 2090 million dollars. At this figure the reserve reached dimensions which alone almost equalled the total of the reserves of the German Reichsbank, the Bank of England, the Bank of France, and the Russian State Bank.

The Bank of Japan was also able to increase its gold reserve from 24.4 million yen to 712.9 million yen between the end of 1913 and the end of 1918.

The first short phase, during which the belligerents were withdrawing gold from neutral countries, was succeeded by a period of an ever-growing stream of gold from belligerent to neutral countries, and the latter were soon in a position to slacken, or even to drop altogether, the measures taken by them for the protection of their gold reserves.

Soon, however, the stream of gold began to lose its advantages, and the neutrals perceived cause for real anxiety as to the ultimate effects of this flood of gold. The gold was not a heaven-sent gift, it came as the bearer of a pressing demand for raw materials and commodities of all kinds. In times of peace the demand for goods was most welcome. Now, however, it proved insatiable and passed all limits. The old motto, "*pecuniam habens habet omnem rem, quam habere vult*," was reversed. Commodities no longer pursued money, it was money—which in international trade was synonymous with gold only—that chased after goods. The belligerents were willing to pay any price, and thereby were forcing up the prices which consumers in neutral countries had

to pay for their own necessities of life. The belligerents positively hungered after raw materials and other goods, and their demands upon neutral countries took on dimensions which threatened the provisioning of their own populations, and rendered it imperative for measures for the protection of such necessary supplies to be taken. The neutrals therefore restricted the export of some important commodities, prohibited the export of others, regulated inland and export prices, and entered into agreements with the purchasing countries whereby they obtained certain compensations in return for their supplies.¹ From protection of supplies to defence against gold—this most formidable bearer of the demand which was depleting supplies—was but a step. The idea of such a defence received support from certain theories and conceptions regarding money. The stream of gold meant for the neutrals an increase in the amounts of currency in circulation. This in turn meant an "inflation" of a kind, although not perhaps to the degree, experienced by belligerent countries as a result of the growing volume of their paper currency. This "gold inflation" and the soaring prices were thought to have a direct connection, especially in Sweden, where the theory was advocated by no less than the reputable economist and clear-minded financial expert, Professor Gustav Cassel.²

Theory and practical necessity combined to bring about a *policy of gold exclusion*.

By a law of the 8th February 1916 Sweden relieved its central bank from the obligation of accepting gold at a fixed rate and giving notes in exchange. This was soon supplemented on the 28th April 1916 by a royal decree, which prohibited any further coinage of gold for private account by the mint.

The example set was followed by Norway and Denmark.

Other neutral States also put difficulties in the way of gold. In some the central banks would accept gold from foreign countries only after a definite special arrangement. Others, such as Spain, reduced the purchase price of gold.

These measures amounted in practice to a suspension of the free coinage of gold. In the belligerent countries the suspension of the convertibility of paper currency and of token coins cut the bond between money and gold, and made it possible for the value of the currency to sink below its original gold equivalent. In the

¹ Cf. the author's work, *Weltkrieg*, vol. ii, sec. "Der Wirtschaftskampf um die Neutralen," p. 202, *et seq.*

² [Gustav Cassel (1866–), Professor of National Economy at the High School of Stockholm, is the author of the "Memoranda on the World's Monetary Problems," which were published by the League of Nations for the International Financial Conference in Brussels in 1920 and "attracted widespread attention," as well as of other important works.]

neutral countries the bond was similarly severed by the suspension of issue of currency in exchange for gold, and in this case it became possible for the currency to rise in value in terms of its original gold equivalent. The effects of these measures, which tended in opposite directions, were accentuated by the enormous increase in the charges for transport and the insurance of gold, and by the numerous prohibitions relating to the export and transit of gold. The metal, which in the decades before the Great War had become the firm and uniform basis of money in the whole civilised world, now lost its position. Its exit meant a loosening of the foundations of the individual monetary national systems, and a severing of all the links which had fused these systems into an international monetary mechanism.

¶ 4. Currency Crises and Paper Money

The catastrophic political tension of the last week of July and the outbreak of war in the early days of August 1914 produced a tremendous panic in the money markets of the world. The course of events, even in the most immediate future, was quite uncertain, and it is easily understood that there should have been a scramble by all to secure sufficient cash for all eventualities. No one knew whether, and to what extent, existing credit accounts would be honoured by cash payments. No one knew whether in the future it would be possible to obtain money by way of credit to any degree approaching that before the War. One had not only to look to the future provisioning of households, but also to secure the wherewithal for agricultural, industrial, and commercial undertakings. The millions of men called to arms had to provide ready money for their homes, their businesses, and their own personal needs. The consequent run on cash was aggravated by the headlong confusion in all countries during the first days of the disorganisation. "The stock exchanges were swamped by orders to sell. Credits were demanded, and bills of exchange were handed into the banking institutions in staggering amounts. Credits were being called in. Deposit and savings banks were being stormed by customers desiring to withdraw their deposits."¹ It is worth noting that this panic, unlike similar previous occurrences, was not entirely due to doubt whether the circulating paper currency was convertible into gold. The runs on note-issuing banks, which occurred in the different countries, had their origin rather in a desire for speculative gain than in a real care for the future. The suspension of gold payments did not in any way produce active disturbance. The important problem was whether it would in future be possible

¹ Cf. the author's *Weltkrieg*, vol. ii, pp. 25, 26.

to obtain without difficulties and delay *any* kind of media of payment, and especially small money for the payment of wages, etc., against good security, such as good trade bills, or stock exchange securities, or goods.

In addition to the enormous increase in the private demand for money, which, for the reasons stated, was an inevitable consequence of the outbreak of war, there was the demand, of enormous dimensions, by all governments engaged in mobilisation, for money for various cash payments, and for the purchase of raw materials.

The ready-money demands which thus arose were combated by various means, first and foremost by restrictive methods.

In France, in order that ordinary and savings banks should be protected against a run, these institutions were empowered by law to pay out only relatively small parts of the amounts which stood in their books to the credit of depositors. In England a remedy was sought by the closing, as already mentioned, of the banks for several days. In addition, the Bank of England sought to restrict the calls upon it by raising its discount rate to 10 per cent. Over and above this, all belligerent countries found it necessary to declare moratoria, partly for transactions in bills of exchange, partly for all bank transactions, and partly for all private contracts.

The only instance in which it was decided not to declare a moratorium was that of Germany. In that country action was confined to counter-measures intended to protect the German business world from the effects of the moratoria declared by foreign countries. It was also made possible, in individual cases by decision of the courts, to defer payments where it was shown that there was an actual and real necessity for delay. Apart from these measures, the solvency of the German economic machine was secured by positive measures. Under such an arrangement the war credit banks (*Kriegscreditbanken*) were established by voluntary combination of the circles interested. There were also agreements between the mortgage institutions in regard to mortgage loans.¹

The demands created by the outbreak of war, although testing the elasticity of the monetary system, could not be satisfied by restrictive measures, such as moratoria and high rates of discount, nor even by positive measures calculated to secure the continuance of credit transactions. It was found everywhere necessary, for allaying the currency panic, to issue large quantities of new *money tokens*.

As it was quite impossible suddenly to increase the metallic circulation, and as, for the reasons already explained, gold was being

¹ Cf. the author's *Weltkrieg*, vol. ii, p. 30.

accumulated and even withdrawn from circulation in order to create a large national reserve, the only media remaining for the satisfaction of the inflated demand for currency were bank notes and the paper money of the State. Accordingly, all countries directly or indirectly affected by the War permitted their note-issuing banks to relax the regulations which circumscribed their note-issuing powers.

The Bank of England was empowered ¹ at the outbreak of war to exceed the limit set to it by Peel's Acts ² in regard to the relation between its note issue and its gold reserve in the event of its discount rate basis being not lower than 10 per cent. The issue limit of the Bank of France was increased at the outbreak of war from 6.8 to 12 milliard francs, and further considerable increases took place during the War. The Bank was further authorised to issue small notes of 20 and 5 francs. Other belligerent and neutral countries also allowed their banks to issue, for the purpose of remedying the great stringency in the supply of small money, bank notes of small denominations, of denominations, in fact, which heretofore had been reserved exclusively to token coins.

In many cases, in addition to bank notes, new kinds of paper money—chiefly of a State, though sometimes of a communal, character—were created, or at least authorised. In addition to these, in so far as very small denominations were concerned, there came into being coins made of iron, aluminium, and other metals or alloys which had not previously been used for currency purposes.

In England the note issue of the central bank was supplemented by the introduction of "Currency Notes" for one pound sterling and for 10s. These were made full legal tender, and were issued at first without any gold cover whatever. From September 1914, however, steps were taken to cover them with gold. Already at the end of 1914 the amount of these currency notes in circulation was 38.5 million pounds, while the note issue of the Bank of England on the same day totalled only 36.1 million pounds. Thus, at that date the currency notes exceeded the Bank of England notes. By the end of 1916 the circulation of currency notes had increased to 150.1 million pounds sterling, whereas that of the notes of the Bank of England amounted to only 39.7 million pounds. At the end of 1918 there were 323.4 million pounds of currency notes in issue as against 70.2 million pounds of notes of the Bank of England. The gold cover of the currency notes reached in the year 1916 the level of 28.5 million pounds sterling, and remained at this level during the whole War,

¹ Currency and Bank Notes Act, 1914, sec. 3.

² Bank Charter Act, 1844.

and beyond it, which, however, amounted to a cover of less than 10 per cent.

In France the notes of the Bank were supplemented by paper tokens of small denominations and by aluminium coins issued by towns and by chambers of commerce.

In Italy the Minister of Finance was empowered to issue State notes of small denominations.

In Germany, on the 4th of August, the measures for the war-time organisation of currency came into force.

The indirect limitation of the note issue of the Reichsbank was first abolished by the repeal of the tax on the note issue. The so-called principle of one-third cover (*Drittelsdeckung*) remained as the indirect limit for the note issue of the Reichsbank, but with the essentially weakening condition that the newly created notes of the loan banks were to be admitted to rank as cover in addition to gold, to current German money, and to Treasury notes which, in accordance with paragraph 17 of the Bank Acts, were so to rank.¹ The notes which in this sense exceeded the cover had, in accordance with the Bank Acts in force up to the beginning of the War, to be covered by discounted bills of at most three months' maturity, normally endorsed by three, but necessarily by at least two, persons of standing, or by cheques endorsed by at least two such persons. Now there were added to this category "non-interest-bearing bonds of the Reich, payable at their full nominal value within three months at latest," *i.e.* short-term Treasury bills. The right of the Reichsbank to issue notes was thus, in practice, made unlimited and placed at the service of war emergencies.

At the same time the duties of the Reichsbank were made considerably easier by the establishment of *loan banks*, an experiment already made by the North German Confederation during the War of 1870-71. Under the law of the 4th August 1914, such banks sprang up in Berlin and in all other places wherever independent Reichsbank institutions existed to support them. In addition, auxiliary banks were established in numerous places. The loan banks were appointed to grant loans against the pledge of securities and goods. Such loans were to be made in the form of "notes of the loan banks" ("*Darlehnkassenscheine*"), and were issued in denominations as small as 2 and 1 marks. They were not, as were the Imperial Treasury notes and the notes of the Reichsbank, strictly speaking, legal tender. In practice, however, no difficulties arose from this fact, as the public pay-offices and the Reichsbank, from the very beginning, accepted payment in

¹ The provision as to the "one-third cover" was not repealed before the 9th May 1921. By a Bank Ordinance of that date it was repealed, at first up to the 31st December 1923.

these notes at their full face value. The commercial world never differentiated between the notes issued by the loan banks, the Imperial Treasury notes, and the notes of the Reichsbank. A factor of particular importance was the property assigned to the notes of the loan banks of ranking, as already mentioned, as cover in respect of the "one-third cover" of the Bank Act.

The Bundesrat authorised the maximum amount of these notes and fixed it at first at 1500 million marks, but soon considerably increased it.

In Germany, too, the issue of new currency by central note-issuing banks and by the government was supplemented by the issue, by towns, of paper and later also of metallic currency of small denominations.

The shortage of small coins continued during the whole War and beyond it, fluctuating merely in degree. Silver coins were being hoarded and gradually vanished from circulation, until at last they were formally demonetised. At first the 2-mark pieces were withdrawn by the Order of the Bundesrat of the 12th December 1917, and later, by the Order of 13th April 1920, all remaining Reich silver coins were withdrawn. The small, easily dirtied, and tearable paper notes were a bad substitute. For the very small amounts of less than 50 pfgs. they were, as the communal notes prove, simply unusable. Experiments were made with new coins of iron (pieces of 10 and 5 pfgs.), zinc (10 pfgs.), and aluminium (1 pfg. and 50 pfgs.) as substitutes for the similar coins of nickel and copper which were gradually vanishing.

How enormous, considering the then value of money, were the demands which had to be satisfied on the outbreak of war is shown by the German Reichsbank finding it necessary to increase its note circulation from 1891 million marks to 3897 million during the two weeks from 23rd July to 7th August 1914, that is by more than 2 milliard marks, or by more than double. Only by placing this enormous sum of notes at the disposal of the market was it possible to effect the financial mobilisation without friction, and only thus could the government satisfy the country's demand, so suddenly and enormously multiplied, and allay, without heavy loss, the panic scramble for ready money.

¶ 5. Paper Money as a Means of carrying on the War

The function of paper currency within a monetary system based on metal is to adjust the circulation to fluctuations in demand. The suspension by the emergency laws of the 4th August 1914 of the convertibility into gold of the notes of the Reichsbank, Imperial Treasury notes, and token coins was not brought about by a desire to revert from the gold standard, but simply by the

urgent war necessity of protecting the national gold reserves. It was intended to resume gold payments as soon as possible, and for this it was necessary to hold a considerable reserve of gold for the period after the War. The great rise in paper money issued at the beginning of the War, in so far as it meant adjusting the circulation to the tremendously increased demand created by the outbreak of war, contained, in itself, nothing foreign to the idea of a metallic standard. Even in times of peace when nothing detrimental to the gold standard occurred, the Reichsbank still found it necessary to issue temporarily, during periods of increased demand for money, correspondingly larger amounts of notes. By increasing its gold reserves during the last years of peace (such reserves being greatly strengthened after the outbreak of war by voluntary deliveries of gold), the Reichsbank was in a better position for taking the steps necessary to alleviate the tension in the money market. For when the reserve of gold stands high, a given increase in the note issue corresponds to a much smaller reduction in the reserve ratio. In point of fact the percentage of the gold cover of the Reichsbank note issue remained quite satisfactory during the first "run" for ready money. It is true that it fell from 43·1, the percentage of the 31st July 1914, to 37·9 on the 7th August, but it recovered in the following weeks to 48·6 on the 23rd November. Even during the greatest tension of the 31st December 1914, it was still as high as 41·5 per cent.

On the other hand, a new factor appeared in the German monetary system—and indeed in that of all the belligerent countries—namely, that, in so far as the issue of paper money was concerned, the State's demand for money for carrying on the War, even more than the economic need for currency expressed by the demand for private credits through discounting of bills, was the primary consideration.

The cost of carrying on the War surpassed all previously formed conceptions. This was so in all the countries. In Germany, the month during which mobilisation took place (August 1914) alone swallowed up a sum of more than 2 milliard marks—that is, more than the total expenditure of Germany (1 $\frac{3}{4}$ milliard marks) during the War of 1870–71. For a time the expenditure lessened, but in March 1915 the figure of 2 milliard marks per month was again reached. At this figure it remained practically up to the late summer of 1916 without any very great fluctuations. At this date the so-called Hindenburg programme¹ brought about an increase. In the month of October 1916 the sum of 3 milliard marks was for the first time exceeded, exactly a year later it was

¹ Hindenburg was, on the 29th August 1916, appointed to be chief of the German armies on all fronts.

4 milliard marks, and ultimately in October 1918 an expenditure of 5 milliard marks was registered.

The total War expenses of Germany were as follows:—

	Milliard Marks.	
	Total.	Monthly Average.
1st Year of War (1st Aug. 1914–31st July 1915)	20·1	1·675
2nd „ „ („ 1915– „ 1916)	24·1	2·008
3rd „ „ („ 1916– „ 1917)	34·4	2·867
4th „ „ („ 1917– „ 1918)	46·9	3·818
(1st Aug. 1918–31st Dec. 1918)	21·8	4·358
Total (1st Aug. 1914–31st Dec. 1918)	147·3	2·780

The problem to be solved by the financial administration of the Reich in order to procure these sums may be set off against the fact that the total circulation, of both metallic and paper currency, amounted in Germany in the years before the War to little more than 5 milliard marks, and that the total German national income before the War was between 42 and 43 milliard marks. For Germany the first year of the War entailed a war expenditure about four times as great as its pre-war circulation, and very nearly half its total national income.

The month of mobilisation alone required nearly two-fifths of the amount of the circulation then available in Germany, and this at a time when, for the reasons explained above, private concerns and individuals were faced with the necessity of keeping a tight hold of and, if possible, of strengthening their supplies of cash.

Similar conditions were observed in the other belligerent countries. A modern State obtains the money it requires in normal times by current State revenue (in the main by taxes and other dues, and to a lesser degree by the income from State property and from public works) and by loans. Expenses spread over a period must on sound principles of finance be covered by similarly continuous revenue. The same principle applies to the so-called temporary expenses, which experience shows recur year after year in different forms. Both kinds of expenses are called “ordinary expenditure.” Loans have to be considered only in connection with “extraordinary expenditure.” On the very soundest principles loans are only justified in so far as expenditure for productive purposes is concerned. The most

important example is provided by extensions and improvements of railways, which of themselves produce the necessary instalments for interest payments and sinking fund contributions for the gradual extinction of the loans.

In both cases—that is, both in regard to current revenue and to the raising of loans—a part of the available purchasing power of private individuals and concerns is handed over to the State by transferring available means of payment. The monetary system as such, in particular the extent of the circulation, is not affected by these two methods of procuring “supplies” for the State. Neither is any additional purchasing power created thereby. What the State gains in purchasing power by drawing its current revenue and by raising loans, the tax-payers and lenders lose.

Radically different from these two methods of obtaining State supplies, both methods which in no way affect the monetary system and do not change the available purchasing power of the country, is a third method, that of *creating new purchasing power* for the State by *printing paper money*. In this connection it is of no practical importance whether the State produces the paper money as a State currency, for its own account, and puts it into circulation as such, or whether it establishes credits at its note-issuing bank, which in turn issues bank notes to the State up to the amount of these credits. This method of procedure leads, in its very nature, to an increase in the circulating currency, and the newly created purchasing power of the State enters into competition with that previously available, and at first seemingly undiminished, purchasing power of private individuals and concerns. In other words, we have the phenomenon known as “inflation,” which must necessarily lead to a fall in the purchasing power of money. This will be considered in detail in the second part of this book, viz. in the theoretical section.

On account of its consequences to the monetary system and to the whole economy of the State, the creation of fresh purchasing power by the printing of paper currency never takes place in normal times with the purpose of providing the government with money.

In time of war, however, the various countries have, from the days when paper tokens first arose, seldom refrained from using the printing-presses to cover some part of their money requirements. Just as they were used to adjust temporary fluctuations in monetary demand due to ordinary economic conditions, so the paper tokens had to serve the extraordinary demand caused by war. This was the case where extraordinary demands could not be covered immediately or at all, in either of the other two ways—that is, by taxation or by loans.

The necessity of having recourse to the printing of paper currency for financing the War was greater than ever before in the case of all States which took part in the Great War, because of its extent and duration. As soon as the governments were faced with the enormous expenses of mobilisation, this necessity was forced upon them. To obtain immediately the necessary milliards by way of taxation was out of the question; to obtain them by way of loans proved impracticable, because the War in itself created, as already indicated, a stringency in the money markets, which not only could not spare any cash but had to procure ready money for themselves. The financing of the mobilisation had, therefore, where it could not be carried out by the use of already existing reserves (such as the war treasure in Germany), reserves nowhere even nearly sufficient, to be undertaken by making calls on the credit of the note-issuing banks—that is, by creating new media of payment and new purchasing power in favour of the State. In Germany the way was decisively opened for the financial administration by the law of the 4th August 1914 (already mentioned on p. 221 above), which placed the three-monthly bills of the Reich on a par with trade bills in the matter of their discount at the Reichsbank.

It was only after the first wave of money demand for war purposes had passed that the belligerents could make any kind of systematic plans for financing themselves through loans and taxes. The degree to which use was made of these methods varied from State to State, but in none was it found possible completely to do away with paper currency as a means of financing the War.

Considerations of sound and efficient finance rendered it necessary that war expenditure should not bring about a lasting and progressive increase of the circulating medium. The money needed by the State for mobilisation, and, failing other immediate sources of supply, obtained by the creation of paper tokens, was poured into the circulation by government payments. The money shortage of the first days of the War soon gave way to an increasingly plentiful supply of currency. If serious "inflation" was to be avoided, it was necessary, by changing the means of money supply, not only to stem the flow of paper notes but also, at least in part, the flood of paper already issued. To this end the two methods already mentioned, *war taxation* and *war loans*, were available.

Already in the second month of the War Germany raised a big loan. She was the first belligerent country to do so. England followed suit in November 1914. But in war taxation England led the way. War taxes were imposed in England as early as November 1914, whereas Germany—and for that matter all other

belligerent countries—refrained at first from the introduction of new taxes.

The author has elsewhere¹ examined in detail the reasons which made it more difficult for Germany than for England to have recourse to war taxation. It will suffice to state here that even England, though in a much more favourable position for tightening the screw of taxation, managed, up to the end of the financial year 1918, to collect only some 15 milliard marks by taxes (including the excess profits tax) over and above her normal revenue, whilst her total war expenditure amounted to 120 milliard marks. Thus even England was only able to cover about 12½ per cent. of her war expenditure by taxation,² and in the case of all the other countries the percentage was very much lower.

Germany, strongly influenced by the ideas of Count Schlieffen,³ at first based her calculations on a short war. The government, Parliament, and the public held the view that, as the War was being fought for Germany's future, the financial burdens could, if they were not met by an indemnity on the 1870-71 lines, be transferred in the main to the shoulders of future generations by means of war loans. At the same time, war loans acted to some extent like taxes by creating a backflow of paper currency, thus tending to counteract the dangers of inflation. It, however, soon became apparent that the War would be of long duration, and as it became clear that the loan interest charges, which were being met out of ordinary revenue, threatened to create a serious deficit, Germany decided at the end of 1915 also to have recourse to war taxes. During the five financial years 1914-1918 Germany not only covered her entire ordinary expenditure by taxation, but managed to have a surplus of more than 3 milliard marks, mainly used for redemption of the national debt. In other words, she was able to diminish her war loans, which meant that she was able, even if to a very moderate extent, to cover part of the War expenses by taxation.⁴

There was a War loan issue every six months—in March and September—as long as the War lasted. The first of these was in September 1914, the last in September 1918, and there were

¹ *Der Weltkrieg*, vol. ii, p. 154, etc.

² Cf. W. Prion, *Steuer und Anleihepolitik in England während des Krieges*, Berlin, 1918.

³ [Schlieffen, "the ablest soldier Germany had produced for fifty years," till 1905 chief-of-staff of the German army, was the author of the plan of campaign put into operation by the Germans in 1914. In order to secure freedom of action against the Russian armies in the East the plan aimed at putting France out of action, quickly and definitely, by a sharp offensive at maximum strength.]

⁴ The revenues and the ordinary budget expenditure of the Reich were

nine in all. These war loans, at regular six-monthly intervals, were intended for funding the "floating debt" contracted during the several six-monthly periods, and consisting chiefly of Treasury bills discounted by the Reichsbank. They would at the same time, it was intended, absorb some of the paper in circulation issued for purposes of financing the War.

The extent to which such war loans, subscribed at regular intervals, made possible the funding of the floating debt may be gathered from the following table.

	(Million Marks.)		
	Amount subscribed.	Treasury Bills outstanding at end of period of Subscription.	Excess of Subscriptions over outstanding Treasury Bills.
1st War Loan (Sept. 1914)	4,460	2,632	+ 1,828
2nd " " (March 1915)	9,060	7,209	+ 1,851
3rd " " (Sept. 1915)	12,101	9,691	+ 2,410
4th " " (March 1916)	10,712	10,388	+ 324
5th " " (Sept. 1916)	10,652	12,766	- 2,114
6th " " (March 1917)	13,122	14,855	- 1,733
7th " " (Sept. 1917)	12,626	27,204	- 14,578
8th " " (March 1918)	15,001	38,971	- 23,970
9th " " (Sept. 1918)	10,443	49,414	- 38,971

The first three war loans yielded, therefore, a growing excess over the amounts of Treasury bills outstanding at the beginning of the period of subscription. The fourth, though unsuccessful for

as follows (cf. *Reichstag Publication*, No. 254 of the year 1920, pp. 6, 13, and 14):—

Financial Year.	Revenue (in million marks).	Expenditure (in million marks).
1914	2,350·8	1,653·2
1915	1,735·2	1,785·6
1916	2,029·4	2,973·8
1917	7,830·4	6,893·6
1918	6,795·0	7,146·0
Total	20,740·8	20,452·2
Deduct sinking fund on debt . . .		2,783·1
Expenditure, exclusive of sinking fund .		17,669·1

For this period, therefore, the revenue exceeded the expenditure (deducting sinking fund) by 3071·7 million marks.

special political reasons (the U-boat controversy and the dismissal of Admiral von Tirpitz), was still sufficient for debt-funding purposes. From the autumn of 1916 onwards, however, these yields of the War loans left outstanding progressive increases in the amounts of the floating debt. Although in September 1916—that is, after two years of war—the amount of this debt was still only 12·8 milliard marks, and after the fifth war loan only 2·1 milliard marks remained unfunded, in September 1918 the floating debt was nearly 50 milliard marks, and the ninth loan, then subscribed, realised only 10·4 milliard marks. There remained, therefore, 39 milliard marks of floating debt unfunded, and by the end of December 1918 this had increased to 55·2 milliard marks. Thus the system of periodically funding the floating debt by War loans was successful during the first half of the War, but proved a failure during the latter half of it. It is a debatable question whether in the later stages of the War, when the results of the loans were in ever-lessening proportion to the growth of the floating debt, the tax screw should not have been tightened, and whether in this way it would not have been possible to absorb a larger proportion of the floating debt and of the currency inflation connected therewith.

In order to judge the effect on the monetary system of the rise in the floating debt, it must be borne in mind that by no means all Treasury bills issued had to be taken up by the Reichsbank, but that, during the course of the War, a growing proportion was taken up in the open market, particularly by private banks, large industrial concerns, and by the administrations of large private estates. Thus, at the end of 1914, of the 2·9 milliards of bills then issued, fully 2·7 milliards lay in the Reichsbank, and only 0·2 milliards could be placed outside the bank. At the end of 1916, of the 12·6 milliards of bills 8·9 milliards still found their way to the Reichsbank, and 3·7 milliard were disposed of in the open market. But the position altered to such an extent that by the end of 1917 the Reichsbank held 14·2 milliard marks, which was a fraction less than the 14·4 milliards held outside it. At the end of 1918 the corresponding figures were 27·2 and 28 milliards, the total of the bills issued being 55·2 milliards.

In the first two War years the German public showed a willingness to invest almost exclusively in long-term loans, but in the latter half of the War short-term loans grew more and more in favour. This change in the attitude of the public had considerable bearing on government finance. The government had now to reckon with the difficulties attendant upon any prolongation of the short-term Treasury bills when they matured. On the other hand, the taking up by the money market of Treasury bills had the same effect on the state of the circulation as had

subscriptions to War loans. In either case, the Reich obtained its supply of money by the transfer to it of existing currency. Fresh currency and additional purchasing power was created by the issue of Treasury bills only in so far as the bills were discounted by the Reichsbank.

The rise in the uncovered note circulation of the Reichsbank was, therefore, substantially smaller than the increase in the floating debt of the Reich. The note circulation rose from 1.1 milliard marks in round figures on the 30th June 1914, to 5.5 milliards on the 30th December 1916, and to 19.9 milliards on the 31st December 1918, whilst the Treasury bills amounted to 12.6 and 55.2 milliard marks respectively on the last two dates.

The notes of the loan banks issued without gold cover against the security of documents and goods ranked as currency in the same way as the notes of the Reichsbank. It is true that the government did not use the loan banks directly for financing, but individual Federal States and communes covered some part of the demand for money created by the War by the use of these banks. The loan banks also furnished, even though to a modest extent, against pledges of securities, the means for the payments on the war loans. A considerable number of the notes issued by these banks found their way to the Reichsbank, and were kept there as cover for the Bank's note issue (see above, p. 221).

The notes of the loan banks which remained in free circulation amounted to 2.9, 6.3, and 10.1 milliard marks at the end of 1916, 1917, and 1918 respectively.

Thus the uncovered paper circulation aggregated 8.4 milliard marks at the end of 1916, and roughly 30 milliard marks at the end of 1918.

To sum up, the position was as follows:—Up to the end of 1918 the Reich had expended roughly 150 milliard marks for War purposes. Of this expenditure less than 30 milliards—that is, less than one-fifth—was covered by the issue of new paper money. More than 120 milliards—that is, more than four-fifths—was provided for partly by long-term loans (up to 89 milliards to the end of 1918) and partly by the sale of Treasury bills on the money market. The interest payments on the War loan, as well as 3 milliards of the War expenditure, were obtained from taxation.

In considering the increase of the paper circulation it should not be forgotten that Germany had to provide currency for the *territories which she occupied* in the East and the West. It is true that, in order to relieve the Reichsbank, special arrangements were made in these areas. Thus, in Belgium, the Société Générale was given the right of issuing notes; in Poland a Polish loan bank was established; for Courland, Livonia and Esthonia, a bank was set up at Oberost. Nevertheless there were large and increasing

amounts of German currency in circulation in these areas. Taking only Belgium, we find that after the armistice no less a sum than 6 milliard marks of German currency was called in by the Belgian government, though a large part of this sum had certainly been brought to Belgium by speculators just before the calling-in. In neutral countries, also, not inconsiderable amounts of German paper money accumulated against a rise in the rate of exchange of the mark. In addition, large sums were locked up in army pay-offices. Last of all, German home trade itself required much larger quantities of currency than in pre-war days, cash transactions being naturally preferred to bills of exchange.

The course of development in currency matters in Germany is typical of that of all the belligerent countries.

In England the bank note was in peace-time of much smaller commercial importance than the cheque; even during the War the inflation of bank credits, the basis of cheques, was of more moment than the increase in the circulation of paper currency. Nevertheless, the amount of the latter rose very considerably. In pre-war days the Bank of England had for a long time past held a reserve of gold substantially in excess of its note issue. Even in July 1914, the gold reserve was 38.1 million pounds sterling and the note circulation only 29.7 millions. On the other hand, there were 68.2 million pounds sterling standing in the books of the Bank to the credit of public and private deposit accounts. By the middle of 1916, this total had grown to 162.6 millions, while the gold reserve had risen to 60.3 millions, and the note circulation had kept to the moderate figure of 36.4 million pounds sterling. But by that time there were already issued, in addition to the bank notes, currency notes to the value of 122 millions, for which there was a gold cover of only 28.5 million pounds sterling. By the end of 1918 the current accounts in the Bank's books had risen to £241,200,000, the gold reserve to £80,000,000, the bank note circulation to £70,200,000, and the currency notes (the gold cover for which still remained at £28,500,000) to £323,200,000. In contrast, therefore, with the excess of gold cover for notes in pre-war days, we find now £313,000,000 of paper currency without gold cover, and in addition £173,000,000 of other obligations falling due at sight.

The amount of uncovered paper circulation was, right up to the last phase of the War, far greater in France than in Germany, notwithstanding the smaller War expenditure of France, the smaller and, unlike Germany, diminishing area of circulation of the French currency, and the ability of France—in this respect also unlike Germany—to finance a substantial part of the War expenditure by foreign loans raised in the U.S.A. and in England.

Already, at the end of 1916, the uncovered note circulation of the Bank of France amounted to 13.3 milliard francs, *i.e.* 10.8 milliard marks, whilst the corresponding figure for Germany was then only 8.4 milliard marks. Half-way through 1918 the French uncovered paper circulation had risen to 25.2 milliard francs = 20.3 milliard marks, the figure for Germany being then 17 milliard marks. Not until after the German collapse did the German uncovered paper circulation reach and pass the French figure. At the end of 1918 the 30 milliard marks of Germany contrasted with only 27.6 francs = 22.3 milliard marks of France.

Circumstances in Russia developed most unfavourably of all. At the time when the War broke out the notes of the Russian State Bank had an almost complete cover of gold. The note circulation of 1634 million roubles had a gold cover of 1600 million roubles. Already by the end of 1915 the uncovered note circulation was, in round figures, 3.7 milliard roubles = 8.14 milliard marks. At the end of 1916 it was 7.1 milliard roubles = 15.6 milliard marks, whilst the corresponding figure in Germany was at the time only 8.4 milliard marks. The last report issued by the Russian State Bank before the Bolshevist Revolution (23rd November 1917) showed an uncovered note circulation of 17.6 milliard roubles = 38.7 milliard marks. The corresponding figure for Germany was only about 13 milliard marks.

The similarly unfavourable course of development in Austria-Hungary, in Italy, and in a number of neutral States can be seen from the statistical tables on pp. 245 and 246.

The course of events in regard to the currency in circulation in the U.S.A. is very remarkable.

The Federal Reserve Banks set up shortly before the War, had by the time of the United States' entry into the War accumulated a considerable gold reserve, but their note issue was of quite unimportant dimensions. Even at the end of 1916 the note issue of the Federal Reserve Banks was only 14.1 million dollars. The gold reserve of 453.7 million dollars was more than thirty times as much. On the other hand, the enormous influx of gold in the two succeeding War years was accompanied by an even greater increase in the note issue. At the end of 1918 the gold reserve of these banks amounted to 2090 million dollars, and their note circulation to 2802 million dollars. Thus, in the two years 1917 and 1918 the circulation of the American currency increased not only by the amount of the additional gold reserve of 1640 million dollars, but beyond it by the amount of the note issue of the Federal Reserve Banks. Whilst at the end of 1916 the note circulation of about 440 million dollars was more than covered by the gold reserve, the note circulation not covered

by gold amounted at the end of 1918 to 712 million dollars. The rise in the American circulation in the two years 1917 and 1918 amounted to 1152 million dollars.

From what has been said it is clear that in all belligerent countries there occurred a considerable increase of the currency in circulation, caused, not exclusively, but mainly, by the use made by the governments, directly or indirectly, of their power of obtaining or creating money. Far-reaching, qualitative changes in the monetary systems, brought about by administrative and legislative means, were supplemented by the enormous quantitative changes both in regard to the aggregate circulation in individual countries as well as in the matter of the relative uses of metal and paper and the extent of the gold cover for the paper issues.

¶ 6. Inflation in Neutral Countries

The constitutional disturbances brought about by the War in the monetary institutions of countries engaged in the War immediately reacted, as has been seen, on the neutral countries. These were compelled to suspend the convertibility into gold of their paper tokens, to prohibit the export of gold, to create new paper and metallic tokens, and, in some cases, also to take measures against being flooded by gold. The quantitative changes in the systems of the belligerents similarly affected neutral countries.

The displacements already mentioned in the national gold reserves, and the influx of gold from belligerent countries, had of themselves the direct effect of increasing the circulation of the neutral countries. The immediate effect was simply an increase in the circulation of gold. But this was not all. The neutrals, especially those in the vicinity of the European War areas, were also forced to incur considerable expenditure, for the financing of which they had recourse in part to the assistance of note-issuing banks. An example is shown in the expenses incurred by neutrals in connection with their mobilisation for the protection of their neutrality. In addition to the inflated expenditure by the State, the neutrals found themselves faced by a larger home demand for money, caused by the necessity of cash settlements in many cases previously dealt with by way of credit and deferred settlement, by rising prices, and by forced production caused by the pressing and insatiable demands of the belligerents. This increased demand in many cases considerably surpassed the increase in the circulating currencies brought about by the influx of gold, and it led to greater calls upon the note-issuing banks and to a serious rise in the amount of the uncovered note issues.

From the end of 1913 to the end of 1918 the following increases took place:—

In the case of the Swiss National Bank the gold reserve rose by 209, the note circulation by 662 million francs.

In the Netherlands Bank the gold reserve rose by 538, the note circulation by 735 million gulden.

In the Swedish Reichsbank the gold reserve rose by 184, the note circulation by 443 million kroner.

The only exception in Europe was Spain. In that country the gold reserve and note circulation kept more or less in touch. The gold reserve of the Bank of Spain rose by 1748 million pesetas, the note circulation by 1887 million pesetas.¹

The inflation caused by the War was thus not confined to the belligerent countries. It became a world phenomenon.

¶ 7. Money in the Post-War Period

At the time of writing (February 1923) more than four years have passed since the Armistice brought, in November 1918, the War to an end. But the so-called "Peace" then created has been described by no other than M. Clemenceau, the man who shaped it, as the "continuation of the War by other means." The world has not yet found real peace. France, at least, continues the struggle with a view to the complete crushing, the economic crippling, the financial bleeding, and the political dismemberment of Germany. The decree of Versailles, the so-called "Peace Treaty," furnishes France with the weapons for waging this war, in particular with the weapon of the War indemnity which has been imposed upon Germany, but which is impossible of fulfilment. By the Treaty of Versailles Germany is called upon to make payments to foreign countries by way of "reparations," ostensibly for the liquidation of pre-war debts, for the costs of armies of occupation, and of control commissions, etc.—payments which, year in and year out, make up a total larger than the whole monetary reserve of Germany before the War. The capital value of the "reparations" debt of Germany was fixed in London in May 1921 at 132 milliard gold marks, a sum which is greater than the entire national wealth of Germany, reduced as this has been by the War, the Peace, and the Revolution. The mutual economic relations of the victorious countries are also burdened by War debts to an extent unprecedented in the history of nations. In July 1921 the amount which the various Allies owed to the U.S.A. in the form of War debts was, including the accumulated interest, more than 11 milliard dollars. England alone owed the States 4573 million dollars, France 3634, and Italy 1809 million dollars.

¹ For details see statistics on pp. 245 and 246.

England, in her turn, has owing to her, for advances made by her, 1787 million pounds sterling, of which 561 million is owed by Russia, 557 by France, 477 by Italy, and 103 million pounds sterling by Belgium. In the face of this enormous indebtedness, international trade is powerless to regulate matters, as formerly, by import and export surpluses. The purchasing power of considerable areas, in particular of Germany, which alone before the War took up an eighth of the entire exports of the world, is depressed by the weight of these debts. These very same areas are forced by the pressure of their obligations to sell their goods and means of production at throw-away rates. The necessary consequence to the creditor nations is a diminution of productive opportunities and increased unemployment. The world's economic organisation cannot find stability, nor can the international money institutions reach order, unless and until international indebtedness is regulated in such a way that it can be liquidated without serious disturbances by annual payments through international trade.

The effects of the international indebtedness resulting from the War and from the conditions of the Peace are all the more serious because both the financial and economic relations of States are, as it is, labouring under post-war disturbances in the sphere of production and labour. Special circumstances must be added in individual cases. Such was the Bolshevik revolution in Russia, which, by destroying the whole machinery of government and of economic and social intercourse, has almost completely segregated this important area of production and market from the rest of the world. Such also was the revolution in Germany, which brought about a displacement in the internal politics and social conditions of the country, the adverse effect of which upon the production of goods has not yet disappeared. In the south-east of Europe a case in point is the break-up of the Danubian monarchy and the consequent dismemberment of a large economic area into various constituents, which have not as yet proved their capacity to survive or to establish internal economic equilibrium. To this must be added the fact that the Peace Treaties, by their disqualification of Germany in politico-commercial matters (such as the withdrawal of most favoured nation clauses, etc.), have destroyed the basis of equal rights on which the world's trade had been built up before the War. Furthermore, prohibitions and restrictions in regard to imports and exports continue in force in nearly all countries.

The world's economic organisation is thus still in a state of disorder, and individual national organisations are still disturbed. Post-war monetary systems reflect this state of affairs.

The constitutional changes in the individual national money

systems which took place during the War still persist. The inconvertibility of paper tokens into gold is maintained, with the sole exception of the U.S.A., in some cases by law, in others by administrative measures. The export of gold has nowhere, except in the U.S.A., been freed from all restrictions. The gold standard, which before the War became universal, is to this day a rare exception. Paper currency dominates the world. As the freedom of gold in international trade has not yet returned, and as the universality of the gold standard, the uniform basis of the international money organisation, has been lost, it has not yet been possible to reconstruct the international money machine. In the place of the international monetary system of pre-war days, co-ordinated by the use of gold, we now have a *chaotic medley of national systems* unrelated to each other and without any equilibrium.

The serious *quantitative displacements and changes* in the international monetary system, and in the system of the individual States brought about by the War, have continued in the post-war period. They have been definitely influenced, both in their nature and in their extent, by the new political, economic, and financial circumstances created by the Peace Treaties: conditions which differ absolutely from country to country.

In so far as the *movement of gold* is concerned, Germany had to suffer a further considerable weakening of its gold reserves. Under the Armistice the Reichsbank was compelled to give up to the Entente the gold received by it from Russia. Germany also had to pay for imports of the necessities of life. From the end of 1918 to the end of 1919 the gold reserve of the Reichsbank thus fell from 2262 to 1089 million marks. In 1920 it kept more or less at this level. In the year 1921, by reason of the payment of the first milliard required by the London Ultimatum of May 1921, the gold reserve fell to a little below a milliard marks. At the end of 1922 it was 1005 million marks. As compared, therefore, with its maximum during the War, the Reichsbank found it necessary to give up more than $1\frac{1}{2}$ milliard marks in gold. As compared with its position before the War, Germany lost its entire gold circulation, amounting to more than 3 milliard marks, plus all the gold ornaments which were delivered up to the Reichsbank during the War.

The gold handed over by Germany after the War was delivered in the main to England, France, and the U.S.A.

Notwithstanding the by no means unimportant deliveries of gold to America, the Bank of England was able to increase its gold reserve from 80 million pounds sterling, the figure of 1918, to 91.4 million pounds sterling at the end of 1919, and to 128 million pounds sterling at the end of 1920, and to keep it ever

since at this high level, never previously reached in the history of the Bank. The jump during the year 1920 was largely caused by the deliveries of gold to the central bank by the English joint-stock banks.

The Bank of France found itself able to increase its gold reserve from 3318 million francs at the end of 1918 to 3600 million at the end of 1920, and to 3670 millions at the end of 1922.

The Bank of Italy has, but for small fluctuations, kept its gold reserve from the year 1918 at more or less the same level.

Of the note-issuing banks of the European neutral States, the Bank of Spain has been able to increase its gold reserve still further. The figures were 2228 and 2513 million pesetas at the end of 1918 and 1921 respectively. In like case are the Swiss National Bank, with figures of 415 and 549 million francs at the end of 1918 and 1921 respectively, and the Danish National Bank, for which the corresponding figures are 197 and 230 million kroner. The Netherlands Bank, the Swedish Reichsbank, and the Bank of Norway had to register a small drop.

The U.S.A., in addition to their former gold output, which showed a slight retrogression, drew from Europe, even after the conclusion of the War, considerable quantities of gold, but gave up on their part large amounts of gold to the Central and South American States and to Eastern Asia. In the year 1919 there was only a gold import of 77 million dollars to be set off against a gold export of 368 million dollars. In the next year, 1920, however, the import of gold rose to 429 million dollars, and the export amounted to 322 million dollars. Of this latter amount more than 100 million dollars went to Japan and 90 million dollars to the Argentine. The year 1921 brought to the U.S.A. an influx of gold of not less than 691 million dollars. Of this sum Europe alone supplied 530 million dollars, of which a large part came from Russia. The export of gold was only 24 million dollars, so that the net import in 1921 was as high as 667 million dollars. The gold reserve of the Federal Reserve Banks showed no important changes in 1919 and 1920, but rose in 1921 from 2059 to 2870 million, and reached 3040 million dollars at the end of 1922. The aggregate gold reserve for monetary purposes of the U.S.A. was estimated officially as having been 3766 million dollars at the end of 1921—that is, more than 40 per cent. of the gold supplies for money purposes of the whole world.

The Bank of Japan, which had already during the War increased its gold reserve from 224 to 713 million yen, registered at the end of 1921 a further increase to 1246 million yen.

The displacement in the monetary reserves of gold of the world to the disadvantage of Europe and to the advantage of

the New World and of Eastern Asia is thus seen to have continued during the post-war period.

The details of the displacements in the gold reserves of the large note-issuing banks are shown in the statistical table on p. 245. It is to be remembered, however, that the displacements in the reserves of the central note-issuing banks do not give a complete picture. It should be borne in mind that the gold coin, which before the War was freely circulated in European countries, as well as large masses of gold formerly used in the form of ornaments and utensils, became concentrated in the central note-issuing banks. A better relative picture of the disturbances in the monetary supplies of gold between individual countries and parts of the world is given by the following estimates, based on the figures of the Director of the American Mint:—

*World's Supply of the Precious Metals for Monetary Purposes
on the 31st December 1920*

Country.	Gold.	Silver.	Per Head of Population.		
	Million Marks.		Gold Mark.	Silver Mark.	All Marks.
Germany . . .	1,092·1	1,491·0	19·74	27·05	46·79
England . . .	3,377·8	1,328·5	73·37	28·81	102·18
France . . .	2,879·2	215·9	49·14	5·21	54·35
Italy . . .	858·3	94·1	23·35	2·56	25·91
Austria . . .	7·6	..	1·22	..	1·22
Russia . . .	1,260·0	..	6·89	..	6·89
Belgium . . .	216·0	22·2	28·18	2·90	31·08
Bulgaria . . .	30·1	13·7	5·42	2·48	7·90
Czecho-Slovakia . . .	25·6	68·8	1·85	5·04	6·89
Denmark . . .	256·0	3·0	85·64	0·97	86·61
Finland . . .	63·5	19·3	19·07	5·84	24·91
Hungary . . .	29·4	5·8	1·43	0·25	1·68
Yugo-Slavia . . .	52·0	12·5	3·74	0·88	4·62
Lithuania . . .	9·2	..	6·13	..	6·13
Netherlands . . .	1,074·0	218·4	158·47	32·05	190·52
Norway . . .	165·8	..	72·37	..	72·37
Poland . . .	12·4	37·6	1·01	3·11	4·12
Portugal . . .	39·0	80·1	6·51	13·40	19·91
Roumania . . .	1·4	..	0·08	..	0·08
Spain . . .	1,990·0	465·0	93·41	22·30	115·71
Sweden . . .	318·4	1·1	54·77	0·21	54·98
Switzerland . . .	387·2	98·5	100·34	25·54	125·88
Europe . . .	14,145·0	4,175·5	27·43	8·09	35·52

*World's Supply of the Precious Metals for Monetary Purposes
on the 31st December 1920—continued*

Country.	Gold.	Silver.	Per Head of Population.		
	Million Marks.		Gold Mark.	Silver Mark.	All Marks.
U.S.A.	12,185·3	2,480·0	112·77	22·93	135·70
Canada	472·9	120·3	56·53	14·36	70·89
Mexico	525·5	106·6	33·89	12·31	46·20
British Honduras	0·1	0·9	3·28	20·58	23·86
Cuba	189·0	35·7	65·18	12·31	77·49
Haiti	3·4	0·5	1·34	0·17	1·51
Honduras	0·1	4·8	0·25	7·52	7·77
Nicaragua . . . . .	..	1·1	..	1·76	1·76
British West Indies . . . . .	..	2·0	..	5·50	5·50
French West Indies	1·3	0·5	6·17	2·35	8·52
Argentina	2,076·6	..	259·27	..	259·27
Brazil	140·9	..	4·70	..	4·70
Colombia	97·9	28·5	17·89	5·17	23·06
British Guiana . . . . .	..	6·4	..	20·58	20·58
Peru	111·9	..	19·28	..	19·28
Uruguay	261·5	..	173·54	..	173·54
Venezuela	94·7	44·2	41·79	19·91	61·70
America	16,161·2	2,831·5	79·19	13·88	93·07
Egypt	16·3	150·5	1·26	11·80	13·06
Rest of Africa	199·4	292·8	5·78	7·02	11·80
Africa	215·7	443·3	3·96	8·14	12·10
Australia	484·7	..	75·17	..	75·17
China	21·0	504·8	0·04	1·51	1·55
Japan	2,711·0	119·8	34·48	1·51	35·99
India (British)	488·3	1,304·4	1·51	4·12	5·63
India (Dutch)	373·8	..	7·01	..	7·01
Rest of Asia	31·9	176·2	0·72	3·96	4·68
Asia	3,626·0	2,105·2	4·46	2·60	7·06
Total	34,632·6	9,555·5	21·67	6·01	27·68

[TABLE.]

*Changes in the Monetary Supply of Gold in Important Countries
from the End of 1913 to the End of 1920*

(In million marks (gold).)

Country.	1913.	1920.	Increase or Decrease.
Germany	3,280	1,092	-2,188
Austria - Hungary (1920 Austria, Hungary, and Czecho-Slovakia)	1,245	63	-1,182
England	3,487	3,378	- 109
France	5,040	2,879 ¹	-2,161
Italy	1,115	858	- 257
Europe	21,828	14,145	-7,687
U.S.A.	8,000	12,185	+4,185
Canada	594	473	- 121
Argentine	1,224	2,077	+ 853
America	10,717	16,161	+5,444
Africa	866	216	- 650
Australia	909	484	- 425
Asia	2,132	3,626	+1,494 ²

Even more significant than the movement of gold is the circulation of paper currency as it developed in the various countries after the War.

In Russia the issue of rouble notes mounted to trillions. By the end of the year 1922 the paper roubles issued amounted to 17 trillions—17,000,000,000,000; by the end of March 1922 it grew to 71 trillion roubles.

In the new State of Poland the paper circulation reached in October 1922 the total of 463 milliard Polish marks. In Austria the paper currency gathered momentum like an avalanche.

But in Germany, too, the flood of paper rose at a terrifying rate after the end of the War.

This enormous rise in the circulation of paper currency in post-war Germany is a direct consequence of the disorganisation

¹ Not including gold described by the Bank of France as being abroad.

² The increase is due almost solely to Japan, whose reserve of gold rose from 546 to 2711 million marks; the other Asiatic countries, especially India, show a drop in their gold reserves.

of the German finances brought about by revolution and by the conditions imposed by the Peace. Compared with this factor, the direct after-effects of the War are of almost secondary importance. The interest payments on the accumulated debt of the Reich require almost 3 thousand milliard marks of the total budgeted expenditure for the current financial year 1922, which is considerably more than 8000 milliard marks. The requirements of the Reich's own administration were, in the fifteen months from May 1921 to July 1922, nearly covered by taxes such as have never been known previously. On the other hand, it is quite out of the question for Germany to raise, by taxation, the amounts imposed upon her by the Treaty of Peace. The burdens, thus imposed, aggregate, with Germany's internal expenditure, a sum amounting roughly to the whole German national wealth. Since the end of the War and from the days of the revolution, it has been quite impossible to raise money by way of loans. The only loan since issued, that of the Minister of Finance Erzberger¹ (Sparprämienanleihe), was a complete failure. Heavy inroads into the national capital, such as the emergency sacrifices (Reichsnotopfer) called for by the Reich, resulted in but a modest contribution towards the amount required for meeting the deficit. The Reich was, and is, therefore, compelled, until such time as the reparations question is settled in a way which the country can bear, to obtain the supplies which it cannot raise by taxation and from other income, by issuing Treasury bills. These, in so far as they are not taken up by the money market, are discounted by the Reichsbank, the proceeds being placed to current or deposit account, or by the issue against them of Reichsbank notes.

In these circumstances the indebtedness of the Reich developed on the following lines:—

	Long-term Loans.	Floating Debt.	Total.
	(In Milliard Marks.)		
Middle of 1914	4·9	0·5	5·4
End of 1918	93·7	55·1	148·8
„ 1919	89·2	86·2	175·4
„ 1920	86·0	174·0	260·0
„ 1921	73·0	265·0	338·0
„ 1922	64·4	1822·0	1886·4

¹ In 1919. (Erzberger and Helfferich were sworn enemies.)
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The decrease in the long-term debt by nearly 30 milliard marks from the end of 1918 has been brought about mainly by the acceptance of war loan in payment of the "sacrifice donation" and by the purchases undertaken for the purpose of supporting the price of the War loan, which purchases were effected on behalf of the Reich by the War Loan Company. In consequence of this reduction of the consolidated debt of the Reich, the floating debt increased between the end of 1918 and the end of 1922 not only by the full amount by which the Reich's indebtedness rose (1737 milliard marks), but over and above this by the 30 milliard marks by which the funded debt of the Reich was reduced, that is in all by 1767 milliard marks in the course of four years.

Treasury bills issued by the Reich did not, in the post-war period any more than during the War, mean that the circulation rose to the full extent of the bills. In fact the taking up of the Treasury bills by the market in the first two years after the Armistice was relatively favourable, so that, at the end of 1920, of the total amount of 152.8 milliard marks issued, only 57.6 milliards remained in the Reichsbank, whilst 95.2 milliards were taken up by the market. In the course of 1921, however, the market for Treasury bills began to narrow down. Whilst the total issue up to the end of December 1921 rose by 94.3 milliard marks to a total of 247.1 milliard marks, the money market took up only 19.6 milliard marks of this increase, so that the Reichsbank saw its Treasury bill holdings increase by 74.7 milliards, from a total of 57.6 to one of 132.3 milliard marks. At the end of December 1922, of the 1822 milliard marks, to which total the bills issued had risen, 1184 were in the Reichsbank.

In conformity with this course of development the note issue of the Reichsbank rose from 22.2 milliard marks at the end of 1918 to 68.8 at the end of 1920, 113.6 at the end of 1921, and 1280 milliard marks at the end of 1922. The loan banks increased their note circulation from 10.1 milliard marks at the end of 1918 to 13.6 milliards at the end of 1919. After various fluctuations the amount of these notes reached nearly the same level at the end of 1922. Adding to this the amount by which the gold reserve of the Reichsbank fell—1 milliard marks in round figures—we get the result that within about four years after the War the uncovered paper circulation of Germany increased from the end of 1918 about forty-threefold.

Even in the victorious countries and in the U.S.A. the paper circulation not covered by gold at first went on increasing after the end of the War. The winding-up of hostilities and its after-effects resulted everywhere in enormous calls upon the finances of the State, and the necessary supplies of money to meet these

demands could not be obtained without the help of the note-issuing banks.

In England, where throughout the War the central note-issuing bank was able to hold a gold reserve of a good deal more than was sufficient to cover its notes, the note issue swelled in the years 1919 and 1920 to an extent which exceeded even the considerable increase of the gold reserve. Whilst from the end of 1918 to the end of 1920 the gold reserve rose from 79.1 to 128.3 million pounds sterling, the note issue increased from 70.3 to 132.8 million pounds sterling, and at the same time the circulation of currency notes increased from 323.2 to 364.6 million pounds sterling, whilst the gold cover for this latter remained at the figure of 28.5 million sterling. Thus, in the two years, the total uncovered paper circulation of England increased by 44.7 million pounds sterling. Since then the process has been reversed. At the end of 1922 the Bank of England's note circulation stood at 124.9 and the issue of currency notes at 301.3, giving a total of 426.2 million pounds sterling, against which there was a gold reserve at the Bank of 127.4 million pounds sterling and a gold cover for the currency notes amounting to 27 million pounds sterling.

In the same years, 1918 and 1920, the Bank of France had to increase its note issue from 30 to 38 milliards—that is, by 8 milliard francs, whilst its gold reserves increased by about 100 millions. The note issue of the Bank of Italy also increased in those two years from 9.2 to 15.4 milliard lire, whilst its gold reserve was increasing by 65 million lire.

In the U.S.A. the gold reserve of the Federal Reserve Banks shows just a slight diminution during those two years—from 2090 to 2059 million dollars, whilst the note issue shows an increase from 2802 to 3561 million dollars. The note circulation for which there was no gold cover thus rose by nearly 800 million dollars.

In the case of the European neutrals the changes in the amounts of paper currency in circulation during the first two years after the War were, in general, inconsiderable. Spain was the only exception. Here we find a further increase of the gold reserve of the central bank from 2228 to 2457 million pesetas, being very greatly exceeded by the increase in the note issue from 3852 to 4326 million pesetas.

In the course of 1922, however—with the exception of Russia, Poland, Austria, and Germany,—even those States which in the two years after the War showed an inflation gave signs of reversing the process. The issue of loans and the tightening up of taxation in the victorious countries brought order, or at least a considerable improvement, into public finances. The measures taken by the banks, especially in the U.S.A. and in England, were directed,

of set purpose, and on a definite plan, to the restriction of the paper circulation—that is, to “deflation.”

The Federal Reserve Board of the U.S.A. so far succeeded in this policy that from the end of 1920 to the end of 1922, whilst the gold reserve was increasing from 2059 to 3040 million dollars, the note circulation dropped from 3561 to 2464 million dollars. A gold cover for the notes of scarcely 60 per cent. was thus, within the short period of $1\frac{1}{4}$ years, transformed into a considerable excess of cover. Notwithstanding an increase in the gold reserve of 981 million dollars, the amount of paper currency in circulation fell by 1097 million dollars.

The Bank of England succeeded during the same period in reducing its note circulation from 132.8 to 124.9 million pounds sterling, while keeping its gold reserve at, in round figures, 128 million pounds sterling. At the same time the circulation of currency notes, which went on increasing without interruption from the outbreak of the War to the end of 1920, was reduced from 364.6 to 301.3 million pounds sterling. Thus, in two years England reduced its paper circulation by 71 million pounds sterling in round figures, whilst its gold cover remained unaltered.

The Bank of Japan diminished its note issue from 1439 million yen at the end of December 1920 to 1108 million yen at the end of March 1922, whilst keeping its gold reserve practically the same. In this way there resulted an excess of cover over notes of 120 million yen.

In France and in Italy, 1921 inaugurated a period of standstill. The same applies to Spain. The other neutral countries showed either a cessation of the increase of currency or else a slight deflation. The details are shown in the statistical table on p. 246.

The process of development, which during the War everywhere took the form of an unexampled increase of the circulating currency, is thus seen to have altered as from the year 1921. Inflation, however, still continues in the countries most hit by the results of the War and by internal disturbances, and in those also which, though artificially created by favour of the Allies, are, like Poland, unfit to be independent States. In by far the greatest part of the world, however, the process of inflation has ceased, and in a number of countries, especially in the U.S.A., Japan, and England, definite “deflation” has come into operation.

¶ 8. Relation between Currency and the Currency Metals during the War and after.

The constitutional and quantitative changes in the monetary system of countries directly or indirectly affected by the War

Changes in the Gold Reserve of the Principal Note-issuing Banks during the War and after.

(The figures relate to the end of the respective years.)

	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.	1922.
German Reichsbank (million marks)	1,170	2,093	2,445	2,520	2,407	2,262	1,089	1,092	995	1,005
Austro - Hungarian Bank (million kronen)	1,241	1,055	685	290	265	262	223	..	..	..
Bank of England (million pounds sterling ¹)	37.1	67.5	51.5	54.3	58.3	79.1	91.3	128.3	128.4	127.4
Bank of France (million francs ²)	3,508	4,158	5,015	5,076	5,352	5,477	5,579	5,500	5,524	5,534
Bank of Italy (million lire)	1,107	1,118	1,077	..	836	..	805	..	..	..
Russian State Bank (million roubles)	1,518	1,554	1,612	1,473	1,292	..	..	..	..	..
Netherlands Bank (million gulden)	151	217	429	587	698	689	637	636	606	581.3
Swiss National Bank (million francs)	116	238	250	345	358	415	547	543	549	535.1
Bank of Sweden (million kroner)	102	108	125	184	244	286	281	282	278	274.0
Bank of Spain (million pesetas)	480	572	867	1,251	1,966	2,228	2,422	2,457	2,513	2,524.8
Federal Reserve Banks (million dollars) . . . . .	..	229	358	471	1,671	2,090	2,090	2,059	2,870	3,040
Bank of Japan (million yen)	224	218	248	411	650	743	713	1,247	..	..

¹ Includes small amounts of silver coinage.

² Includes "gold abroad."

Changes in the Note Circulation of the most important Note-issuing Banks during the War and after.

(The figures relate to the end of the respective years.)

	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.	1922.
German Reichsbank (million marks) . . .	2,593	5,046	6,918	8,055	11,468	22,188	35,668	68,805	113,639	1,280,095
Notes of Loan Banks . . .	..	..	..	2,872	6,265	10,109	13,692	11,975	8,275	13,400
Austro-Hungarian Bank (million kronen). . .	2,494	5,136	7,162	10,889	18,440	35,588	54,481	..	..	..
Bank of England (million pounds sterling) . .	29.6	36.1	35.3	39.7	45.9	70.3	91.3	132.8	126.5	124.9
Currency Notes . . .	..	38.5	103.1	150.1	212.8	323.2	349.8	364.6	325.6	301.3
Bank of France (million francs) . . .	6,635	10,043	13,310	16,679	22,237	30,250	37,275	37,902	36,487	36,359
Bank of Italy (million lire) . . .	1,764	2,162	3,010	3,867	6,539	9,223	12,692	15,437	13,477	..
Russian State Bank (million roubles) . . .	1,669	2,864	5,304	8,591	18,917	..	..	..	..	..
Netherlands Bank (million gulden) . . .	334	494	577	758	890	1,069	1,033	1,072	1,013	974.1
Swiss National Bank (million francs) . . .	314	456	466	537	702	976	1,036	1,024	1,009	976.4
Bank of Sweden (million kroner) . . .	304	328	417	573	814	747	760	731	591	582.2
Bank of Spain (million pesetas) . . .	1,965	2,100	2,360	2,751	3,268	3,852	4,370	4,326	4,244	4,187.0
Federal Reserve Banks (million dollars) . .	..	..	13	14	1,254	2,802	3,319	3,561	2,528	2,464
Bank of Japan (million yen) . . .	426	386	430	601	831	1,145	1,555	1,439	..	..

greatly influenced the whole complex of phenomena comprised within the term "value of money." The nature and interconnection of these phenomena will be investigated in detail in the fourth section of the second (theoretical) part of this book. At this stage we are concerned only with explaining the historical development of the relations between the value of money and both the money metals, and with the relation between the various national units of currency,

(a) *The Relation between the Value of Money and of Gold*

Before the War throughout almost the entire civilised world money had come to be firmly organised on the basis of the gold standard. All countries had a free interchangeability between gold and currency by dint of free coinage of gold and free convertibility into gold of other types of currency, and this established a fixed relation between gold and currency, which had its expression in a stable price of gold. The fixed relation of value between gold bullion and the various national units, such as the mark, the pound sterling, the franc, the dollar, etc., resulted in the mutual relations of the various national units—as expressed in the rates of foreign exchange—being very nearly as stable as the relation between each of these units and gold. Furthermore, the purchasing power of money as reflected in the prices of commodities was fairly stable, in view of the slowness and difficulty with which changes took place in the relation between gold and other commodities.

Thus the fixity in the price of gold, resulting from the constitution of the monetary system, became the fundamental factor in the relative values of the various national currencies. In other words, it co-ordinated the rates of exchange of the different currencies. It was also the co-ordinating factor between money and goods—that is, for the determination of the purchasing power of money.

The War, as has already been shown, almost everywhere radically altered the constitution of the system with its fixity of the price of gold. The general convertibility of currencies into gold was everywhere suspended, and this suspension has not to this day been removed, except in the case of the U.S.A. It is true that some countries have retained the free coinage of gold, but only where the market price of gold is much higher than the price given for it by the mint, and free coinage thus remains a dead letter. In countries, however, into which gold began to flow copiously, the free coinage was suspended or at least restricted. Furthermore, the various restrictions on trade in gold, particularly on export and transit, have deprived it of its international mobility.

All these measures completely destroyed the gold market. As soon as the War broke out there no longer existed a uniform price for gold in the open market. Gold ceased to be quoted on the London market, which had previously been the centre of the world's gold trade. Other countries, in which there had been a free market for gold, also ceased quoting. No substitute markets developed anywhere, not even in the U.S.A. Although during the War and after it, larger amounts of gold changed hands in the United States than ever before, even on the London market, these dealings were confined to so small a circle that there appeared to be no demand for an official quotation of the price of gold. Inquiries in New York in every case showed that the price of bar gold was not quoted, but that gold was actually being bought and sold there (and in fact only there) at prices corresponding to, or with but minimum deviations from, the gold parity basis of the dollar. Only in the early days of the War does the price of gold appear to have fluctuated at all substantially in New York. These fluctuations were caused by the large demand for gold from and the large shipments of it to belligerent countries.

In all other countries the price of gold fluctuated considerably. These fluctuations were caused by a variety of factors. As price quotations for bar gold are not available, these fluctuations must be measured by the standard of the American dollar, which alone, on the whole, has remained stable in terms of gold. In other words, it is necessary to measure the movement of the various exchanges on a basis of comparison with American money. A detailed examination of the variations in the rates of exchange since the outbreak of the War will be undertaken in a later portion of this book. From that examination it will be seen that the price of gold in many neutral countries must at times have been lower than its mint price. In the main, however, the market price in neutral countries has been higher than the mint price. In the case of belligerent countries this has been, and continues to this day to be, the general position.

In England an attempt was made to preserve the fiction of a fixed price of gold. After the outbreak of war an order was issued providing that gold could be sold only to the Bank of England, and only at the old price of 77s. 9d. for a standard ounce. The South African and Australian mines were required to dispose of all their output to the Bank of England at this price. These regulations remained in force throughout the War. But the sale to the Bank of England, under these regulations, of the gold produced within the British Empire does not give a true picture of the position. The regulations merely had the effect of causing a serious set-back in the production of gold. When in 1919 the

British government gave way to the pressure of the mining interests, and allowed them to sell their gold output at a higher price on the London market, it soon became apparent, although there was still no question of a free market for gold, that there was a considerable difference between the market and mint prices of gold. The quotation, which was no longer expressed in standard ounces, but in ounces of fine gold, followed thenceforward the course of the dollar rate. Whilst the statutory gold contents of the sovereign correspond to a gold price of 84s. 11½d., the price of gold stood for a time in February 1920 at 127s. 4d.—that is, 50 per cent. higher than the mint price. With the improvement in the dollar rate of the pound, the price of gold dropped in conformity. On the whole, the price of gold fluctuated in London during 1920 between the limits of 127s. 4d. and 102s. 7d. In 1921 the limits were 115s. 11d. and 97s. 7d. for an ounce of fine gold. The difference between the market and mint prices of gold—the gold premium, or “agio”—fell in the course of 1921 to about 15 per cent. Since then it has fallen further. At the end of 1922 the London price of gold stood at 88s. 11d., and the gold “agio” was then only 4·6 per cent.

An actual premium on English gold coins—a premium such as in earlier days, when the power of the State was less, always arose under similar conditions—appears, however, never to have been established during the War or after. Gold coins disappeared from circulation, and there were no dealings in British gold coins worth mentioning.

In Germany before the War gold was quoted in Berlin and in Hamburg, but these official quotations ceased at the outbreak of the War. On the 23rd November 1914 the Bundesrat issued the order, already referred to, prohibiting dealings at a premium in gold coins of the Reich, except under licence from the Imperial Chancellor. It is doubtless true that while for patriotic reasons the main bulk of foreign gold coins was delivered to the Reichsbank, and exchanged for notes of the same nominal value, many cases occurred of surreptitious dealings at a premium in the Reich's gold currency. The prohibition had, however, the effect that such a premium never became an open phenomenon.

Dealings in foreign gold currency were also restricted, first by an order of the 20th January 1916, and later by one of the 8th February 1917. Both of these orders concentrated these dealings at the Reichsbank and a number of specified banking concerns. Together with the later order (which regulated dealings in exchange), an order was issued fixing at 2790 marks per kg. of fine gold the maximum price of all kinds of raw, waste, and broken gold. This maximum price corresponded exactly to the mint price of gold. Lastly, an order of the 10th May 1917

permitted the melting down of gold coins only under licence to be issued by the Chancellor.

These orders, which put a complete stop to all trade in gold and gold coins, were only repealed after the conclusion of peace. The maximum price for raw, waste, and broken gold was abolished by the order of the 23rd July 1919. On the 11th September 1919, by the repeal of the order of the 8th February 1917, dealing with the regulation of rates of exchange, the trade in foreign gold coins was permitted. The restriction on the working up of the gold coins of the Reich was finally removed by the order of the 9th December 1919, and an order of the 19th December 1919 similarly removed the prohibition against giving a premium for Reich gold coins. On the other hand, under paragraph 21 of clause 8 of the law passed on the 31st August 1919, consequent upon the Peace Treaty, it was made a punishable offence to possess gold without the permission of the Home Secretary. This provision was in force at first until the 31st May 1921. It was extended by a law of the 28th April 1921 to the 30th September 1921. From that time internal trade in gold and gold coins has been to all intents and purposes free. But the export and transit of gold are now still prohibited under the order of the 13th November 1915.

Although the law which was passed to carry out the terms of the Peace Treaty restricted dealings in gold, there arose nevertheless a free market in gold on the Berlin Stock Exchange towards the turn of the year 1919. Only on the 17th February 1921 did the Stock Exchange Committee issue an order putting a stop to this trade in gold. The rates for gold 20-mark pieces quoted between January 1920 and February 1921 reached their maximum in January 1920 with a figure of 450 marks, fell to 160 marks by May 1920, and then rose again to 340 marks in November 1920. The quotations for gold and gold coins ceased on the 17th February 1921 (the last being 328 marks) and have not been resumed, although the restrictions on the disposal of gold were removed on the 1st October 1921.

On the other hand, the Reichsbank, in view of the London ultimatum, which obliged the Reich to procure large amounts of gold, was empowered in May 1921 to buy gold coins and gold bars for the account of the Reich at prices to be fixed by the Bank. The Reichsbank's price for the 20-mark piece was at first 260 marks, but had to be increased to correspond with the tremendous rises then taking place in the rates of exchange of the dollar. At the date of writing, February 1923, it amounts to no less than 150,000 marks—that is, 7500 times the nominal rate! Even at this rate the price is lower than the world market price for gold, based upon the rate for and the fine gold content of the American dollar.

In view of the fluctuations in their value, not only in the open market, but also in the rates quoted by the central bank, the gold coins of the Reich have disappeared altogether from the German system of currency, although they have not formally been called in.

Gold coins are, therefore, no longer currency, but merely commodities, as is the precious metal of which they are composed.

The legislature has drawn certain conclusions from this development, and has made special enactments, particularly in the sphere of taxation. In accordance with the law of the 30th April 1920, gold and silver coins are to be reckoned at their metallic value in connection with the "emergency donations" to the Reich. The banks were instructed to give the rate of 220 marks for a 20-mark piece as the relevant rate for the value of the metal on the 31st December 1919. Similarly the income-tax law for 1922 contains, in section 15, paragraph 6, the provision that "gold and silver coins are to be taken at least at their metallic value."

In the Treaty of Versailles, which has, of course, the force of law in Germany, the section dealing with "Reparation" (Part 8) and "Financial Clauses" (Part 9) is based on the conception of a "gold mark," but this "gold mark" is neither a coin nor is it a legal medium of payment. It is defined in Art. 262 of the Peace Treaty as follows:—

"Any monetary obligation due by Germany arising out of the present Treaty and expressed in terms of gold marks shall be payable at the option of the creditors in pounds sterling payable in London; gold dollars of the United States of America payable in New York; gold francs payable in Paris; or gold lire payable in Rome.

"For the purpose of this Article the gold coins mentioned above shall be defined as being of the weight and fineness of gold as enacted by law on January 1, 1914."

The "gold mark" is thus simply a calculating factor in connection with payments to be made by Germany under the Treaty. The payments themselves have to be made in pounds sterling, gold dollars, gold francs, or gold lire, to suit the creditor countries, and strictly speaking (only in the case of the pound sterling has the addition of the word "gold" been omitted) not in the currency of the creditor countries named, but in the effective gold coins of these countries, which, with the exception of the American dollar, command a premium in the circulating paper currency of the country, and thus themselves stand outside the actual monetary organisation of these countries. In connection with the conversions from gold marks to pounds sterling, American gold dollars, French gold francs, and Italian gold lire, the legal gold content as it existed at the beginning of the year 1914 is to

be used. In effect, therefore, the obligation, expressed in gold marks, amounts to specified quantities of fine gold expressed in terms of the gold coinage of creditor countries.

In practice the Reparations Commission has almost without exception demanded payment in American dollars calculated on the basis of the old par value.

The "gold mark" of the Treaty of Versailles has, therefore, nothing to do with the German monetary system as such. It has not in any way re-established the broken link between German money and the gold metal.

In all belligerent countries, with the exception of the U.S.A., a downward deviation of the value of money from its previous gold equivalent has taken place—in other words, a rise in the price of gold over its legal mint price. This has happened in England, in a diminishing and, since 1920, ever-lessening extent. In Germany, on the other hand, it has increasingly operated and has been rapidly progressing since 1921.

In neutral countries, also, a rise in the price of gold over and above its mint price has occurred, although to a smaller extent than even in the most favourably situated belligerent countries. Nowhere to-day is there to be found a state of affairs in which the gold price stands below the mint price, a phenomenon which we saw during the War as a result of the refusal by the central banks to accept gold in exchange for bank notes or for purposes of coinage.

(b) The Price of Silver

The storm and stress of the Great War not only shook the foundations of the relation between money and gold, but also drew into the vortex the white metal which during the half-century before the War had lost, step by step, its importance as a currency metal and suffered at the same time a decline to about one-third of its erstwhile value.

Already in the first years of the War there occurred a striking rise in the price of silver. Whilst in 1914 the London price of silver again reached nearly the lowest figure which had ever been recorded, at 22½d. for a standard ounce—(the lowest quotation being 22d. in 1908)—it rose in the course of November 1915 to 27½d., and in the course of May 1916 even to 37½d., the highest rate ever recorded since the suspension by India of the free coinage of silver in the spring of 1893. There then occurred a slight set-back, and subsequently the rate was at a standstill until the spring of 1917.

This first strong upward movement in the price of silver was caused by the large demand from England and from other belligerent countries which attempted to alleviate their shortage

of small coins by an increase in the coinage of silver currency. The British Treasury alone took from the market in the year 1915 more than 3 million pounds sterling worth of silver. Then there came an increased demand for silver for Eastern Asia, especially for India and China, required for the payment of the considerable imports of commodities from those areas. The belligerents sought to appease their hunger for commodities not only by supplies from European neutrals, but also by drawing on the East. The belligerent countries, and especially England, which acted as the principal middleman and financier for these supplies, had no inclination to pay for these imports with gold; and, as notwithstanding the suspension of free coinage by India two decades before, and the establishment of Indian coinage on a gold basis, Asia was capable of absorbing almost unlimited quantities of silver, silver was, of itself, indicated as the medium of payment for the East, and was thus subject to a very large demand. This demand was stimulated by the necessity of paying, in silver rupees, the wages of Indian troops then fighting in Mesopotamia, on the Egyptian frontier, in East Africa, and in other war areas.

The tendency upward in price was still further accentuated by the fact that on account of the Mexican disturbances (Mexico supplied in the years before the War a good third of the output of silver of the world) the production of silver showed a strong set-back, from 7 million kg., on the average of the years 1910-1913, to not more than 5 million kg. in the following years.

In the year 1917, when the United States entered the War and the Allies had to muster all their available strength in view of submarine warfare, Eastern Asia became of much greater importance for the provisioning of the belligerent countries. This added importance to silver, and the price of silver on the London market rose, between March and September 1917, from 35d. to 55d., a level at which it had not stood at any time since 1878.

The soaring price of silver gave rise to active speculation in that metal which accentuated the upward movement, and a series of measures had to be taken, similar to those adopted in the case of gold. A number of States prohibited or restricted the export of silver. This was done in the most important silver-producing countries—Mexico, the United States, Peru, in England, where the export was placed under Treasury control, in India and China, which prohibited export, and in Japan, where the melting down of silver coins and the export of silver were prohibited.

Similar steps were taken in many other countries. Prohibitions of the melting down of silver coins and of the export of silver appeared particularly necessary in those countries, the nominal value of whose silver coinage had become, by reason

of the high price of silver and of the fall in the country's rate of exchange, less than the value of the silver content.

England and the United States, who bore the burden of financing the war for the Allies and of paying for the imports from East Asia, sought ways and means to alleviate the position. As might be expected, England made full use of credits placed at its disposal by the government of India. From 1917 onwards the American government also made use of Indian government credits for the financing of its Indian purchases. Strong pressure was exercised upon Mexico with the view to the removal of the export prohibition on its silver output. At the end of 1917 the American Treasury even allocated to the Mexican government a sum of 15 million dollars in gold on condition that the export of silver from Mexico was permitted.

Over and above these measures, England and the United States came at the end of 1917 to an agreement in regard to the purchase of a large part of the American output of silver. At that time the price of silver was also being depressed by rumours that the American government intended to requisition the entire American supplies of silver and to control the price of the metal.

The most important step, however, was the mobilisation of the large stocks of silver¹ which the American Treasury had accumulated under the provision of the Sherman Act (1890). These had been purchased and paid for by the issue of silver certificates, and they were kept in reserve as cover for these certificates. In the spring of 1918 the American Congress passed the Pittman Act, which authorised the government to sell up to 350 million dollars² of these silver stocks, to call in the certificates issued against this silver, and to issue in their place notes of 1-, 2-, and 5-dollar denominations. With the passage of this Act, the American and English governments fixed, by mutual agreement, maximum prices of silver. The maximum price in New York was at first fixed at 100, then at 101 $\frac{1}{4}$ cents per fine ounce; in London it was at first 49d. and then 49 $\frac{1}{2}$ d. per standard ounce. These measures placed the silver market for some time effectively under the control of the two governments. At the same time the Indian government was prevailed upon by the British Treasury to attempt to modify the effects of the unprecedentedly favourable Indian trade balance. India now took steps, similar to those previously taken by the Swedes and by other neutral countries, to protect herself against the influx of gold. About the middle of 1917 the Indian government restricted the imports of both gold and silver. The imported gold was requisitioned at a price which, on the fixed parity of 15 rupees=£1, corresponded at first to the English mint price for

¹ 375,000,000 fine ozs.

² About 270,000,000 fine ozs.

gold. The silver was requisitioned at a price 5 per cent. below the London quotation of the day of arrival. Simultaneously with these measures, notes of small denominations, down to 5 rupees, were issued as a substitute for the silver. The main purpose of this policy of exclusion of silver and gold was not so much—as in the case of Sweden—fear of inflation, as the British government's concern for the preservation of its gold reserve, and its efforts to keep the price of silver low by abolishing speculation and concentrating in its own hands the shipments of silver to India.

The combined effect of all these measures was that, from the middle of 1918 until late in the spring of 1919, the price of silver actually remained almost stable. In May of the latter year, however, the maximum price of silver was abolished both in America and in England, and the former country also removed its export prohibition. The consequence was that a fierce demand for silver for India and China now set in and forced the price up at an unprecedented rate. The American government made large sales of silver in order to depress the price. Large quantities of silver were exported. In 1919 they amounted to 239 million dollars, of which India and China received 109 and 70 million dollars respectively. Nevertheless, the New York quotation for silver in November 1919 went to 137.5 cents, and in January 1920 even to 140.75 cents per fine ounce. The latter rate corresponded to a ratio of value of 1 : 14.7 between silver and gold. Not since 1880 had such a ratio obtained.

The silver appreciation had in many countries already forced the metallic value of the silver coins above their nominal value and brought about the melting down of the coins. The United States official ratio between the value of the metals in the gold and silver dollar (1 : 16) was now exceeded. In order to preserve the circulation of silver the MacFadden Bill was passed early in 1920, reducing the silver dollar from 900 to 800 thousand parts in fineness.

More drastic steps were found necessary in other countries. England had in the autumn of 1919 to revive its prohibition on the export of silver and silver coins. Soon after, the fineness of the English silver coins was reduced from 925 to 500 thousand parts.

Other States contented themselves with the remedy provided by the prohibition on melting down and on export of silver coins. Again others withdrew their silver coins from circulation and sought to get the public to deliver them up to the Treasury in exchange for paper currency. Thus in 1917 Italy deprived its silver token coins of their power of legal tender, laid it down that they were to be delivered to the State Bank in exchange for

paper currency, and made it a punishable offence to possess more than ten lire of such coins. In Germany, where the silver 2-mark coins had already been withdrawn from circulation in 1917, all silver currency was declared by an order of the 13th April 1920 to be no longer legal tender. The Reichsbank attempted to procure as large a part as possible of the available silver coins by paying a comparatively good price for them.¹

The process of development was very different in China and Japan. The Chinese currency was on a silver standard and simply adjusted itself to the silver appreciation. In India the English sovereign had been embodied in the currency in 1890 as a coin of full legal tender at the rate of 15 rupees = £1, but the actual circulation in India continued to be exclusively in silver. So long as the ratio between the two metals was less favourable to silver than their official ratio, it had been possible to stabilise the rupee on the basis of this rate of 15 rupees = £1, or 1 rupee = 16d., by suspending the free coinage of silver, helped by the favourable Indian trade balance. Now, however, as the English pound fell below its gold parity value, and as at the same time the price of silver rose far above that on which in 1899 the ratio between the rupee and the sovereign had been based, the appreciation of silver had, in conjunction with the restrictions placed by the Indian government on the imports of gold, the effect of destroying the par relation between English and Indian currency, a relation which, by the experience of two decades, seemed to have been definitely secured. When later we come to study the developments in foreign exchanges in the post-war period, we shall see that the Indian rupee rose in value, not only considerably above the par value assigned to it in English money, but also above the gold equivalent corresponding to that parity.

Rapid and surprising as was the rate of increase in the price of silver, the reverse process, at the beginning of 1920, was even more rapid and staggering. The demand of East Asiatic countries fell off. The silver withdrawn from circulation by the European States was being offered for sale. Offers were also made by the bullion trade of the silver which had been bought as coin and melted down. All these factors greatly depressed the market. Whilst in January 1920 the price in New York was 140½ cents,

¹ The price which the Reichsbank gave for the Reich's silver coins was fixed at first in May 1920 at 3 marks for every 1 mark nominal. By November 1921 the price had been raised to 20 marks. Subsequently, in conformity with the fall in the price of silver in London and in New York, the Reichsbank's price was very considerably reduced. In autumn of 1921 the collapse of the mark on foreign exchanges began, and since then the Reichsbank's price has had to be frequently and greatly raised. In February 1923 it amounted to 1750 times the nominal value of the silver coins.

by the 10th December 1920 silver commanded a price of only 59½ cents in the open market.¹ In March 1921 the price went down to as low as 52½ cents in New York, and to 30½d. in London, a low level not touched since 1916. A reaction came. It was a severe one, but not comparable with the collapse, and did not endure. At the end of 1922 silver was quoted at 64½ cents in New York and at 39⅞d. in London.

The above outline shows that the serious fluctuations caused by the War in the value of silver had a far-reaching effect on the monetary systems of individual countries, and on the relation in which the various monetary systems stood to each other, though this effect may not perhaps have been as marked as that caused by the breaking of the bond between gold and silver. The currencies of belligerent countries, and especially of those European States which suffered defeat, were deprived not only of their gold but also of their silver. In some countries actually every silver coin disappeared. The stocks of silver coins accumulated for centuries by European States, and preserved even after the transition to the gold standard, have, while the New World was importing European gold, been drained away to a large extent to India and China.

¶ 9. The Disturbance of the Foreign Exchanges

The disturbance which the War caused in the fixed relation between money and gold quickly made itself felt in the reciprocal relations between the individual national monetary units—that is, in international rates of exchange.

In considering this question the material at our disposal is incomplete. In some countries, for instance, the rates of exchange with enemy States were not quoted during the War. Thus, in Berlin no dealings in the exchanges of enemy countries were admitted until after the ratification of the Treaty of Versailles, and not until the 2nd of February 1920 was any official quotation published. Berlin even stopped quoting until the 28th January 1916 the rates of its own Allies and of neutral countries. Furthermore, the official quotations were constantly influenced by government regulation. But after all is said and done, a fairly good picture of the disturbance of the international monetary organisation can be obtained from the quotations issued without interruption by the stock exchanges of the more important neutrals throughout the War.

The War, in revolutionising the trade relations between individual countries, created an entirely new set of conditions for the settlement of international payments. The export trade of

¹ The American government continues to accept silver of American origin at the fixed price of 99½ cents for coinage purposes.

belligerent countries dwindled, as these had to turn all their efforts to war purposes. At the same time, the need for imported necessities of life and for war material grew enormously. The existing organisation for the settlement of international debts broke down under the unprecedented strain to which it was now subjected. It had been established on the basis of the free acceptability of gold at fixed prices at all important centres of international trade, and on the basis of unrestricted movement of gold. These basic conditions were now abolished; paper money ceased to be convertible into gold, the acceptance of gold by the central note-issuing banks and by mints was restricted, and the export of gold was prohibited or placed under control. Free play was given to forces making for the wildest fluctuations in the relative values of the currencies of the various States.

The countries at war tried various means of influencing the course of exchange rates in their attempts to find a substitute for the stability in international exchanges formerly secured by the functioning of gold.

Gold, withdrawn from the open market and thus ceasing with the loss of its free mobility between country and country to limit within a narrow scope the possible fluctuations in the rates of exchange, was itself employed by the governments as an instrument for systematically influencing international exchanges. This was especially so in the case of England. This country received, for reasons already indicated, important additions to its stock of gold throughout the War, and could for that reason spare the gold necessary for regulating its rate of exchange more freely than could any of the other belligerent European nations.

In addition to gold, the raising of foreign loans and credits was adopted as a method of stabilising exchanges. In the case of the Entente countries, the loans and credits raised in the United States of America played the most important part amongst the measures taken for the support of their exchanges. The exchange position of Germany and of its Allies, however, suffered, from the very beginning, by the impossibility (in view of the state of public opinion in the United States from the outbreak of war) of raising in the United States credits of any importance. Germany had, therefore, to content herself with using as cover for her imports, and as support for her rates of exchange, the relatively modest credits which she could obtain from European neutrals, mostly in exchange for gold and by agreements for the import or delivery of certain specified commodities.

The belligerent governments also tried to counteract the depreciation of their exchanges by mobilising and requisitioning foreign securities. England, Germany, France, and other countries introduced compulsory notification of such foreign securities by

their holders. By free purchase, by borrowing under favourable conditions, and, finally, by commandeering, the various governments placed themselves in possession of those classes of foreign securities for which the greatest demand existed in the important neutral markets. In this way, the old European creditor countries disposed of a large and certainly the most valuable part of their stock of foreign securities.

The depreciation of the exchanges was further combated by a series of measures in regard to import and export. The various governments tried to limit as much as they could the displacement of their trade balance by restricting imports and by encouraging the export of dispensable commodities. Germany went so far as to order on the 18th January 1917 that no imports whatever were to be made without licence. On the 25th February 1916 the import of dispensable commodities, to be specified by the Chancellor, had already been prohibited. Exports, too, were limited by war circumstances and later by the conditions brought about by the revolution. They were made subject to permits, which even to this day are issued only on condition that, in the case of export to countries with a higher rate of exchange, the price is fixed in the currency of the foreign country in question, is fixed sufficiently high, and a sufficient part of the foreign currency thus obtained is delivered up to the Reichsbank.

Last of all, some countries attempted to regulate foreign exchanges by way of a direct control of all foreign payments and credits. These attempts deserve to be examined in a little more detail. It is proposed, therefore, to give a short outline of such steps taken in Germany. These give a sufficiently representative picture.

The first step of this kind taken by the German government was the *Order by the Bundesrat, on the 20th of January 1916, in regard to dealings in foreign money.*

The issue of the order was necessitated since speculation in foreign exchange, which, in proportion as foreign rates were rising was becoming more and more profitable, was also becoming more and more rife, and was intensifying the depreciation of the German currency. It also became apparent that the strong demand for foreign moneys on the German markets was due to arbitrage dealings in which not only the countries allied to Germany but also neutrals and enemy countries took part in order to control German foreign credits for their own purposes.¹

In view of the difficulties of obtaining foreign exchange required for covering legitimate imports as a result of these

¹ Cf. the "Memorandum upon the Economic Measures necessitated by the War," 8th Supplement, *Publications of the Reichstag*, 1914-1916, No. 225, p. 76, etc.

measures, importers were driven to the necessity of requesting more than they actually needed when stating their requirements to their banks. Some took the precaution of applying for foreign exchange at different banks at the same time. This procedure tended to force up still further the rates of foreign exchange.

In these circumstances—whilst it was recognised that a permanent improvement in the German exchange could only be effected by a favourable turn of events in regard to the elementary factors which controlled the German balance of trade—it appeared to be necessary to make an attempt to exclude the evil effects of speculation and of arbitrage by centralisation and control of foreign exchange operations.

The Order of the Bundesrat of the 20th January 1916 provided that foreign currencies and notes, as well as drafts, cheques, and short-term bills on foreign countries could be bought, exchanged, or borrowed by industry only from persons and firms specified by the Imperial Chancellor and sold, pledged, or lent only through such persons and firms. The Chancellor was empowered to make exceptions, and he used this power in exempting dealings which involved mere changing of money, transactions with the occupied territories in Belgium and Russia, and postal traffic. In addition to the Reichsbank, a number of the leading banks in Berlin, Frankfort-on-the-Main, and Hamburg were licensed for this trade. These licenses were dependent upon the firms in question taking over certain specified obligations. In particular, rate-arbitrages were not to be effected, offers of exchange at home and abroad were not to be made, and exchange was to be disposed of without the permission of the Reichsbank only where necessary for the payment of the import, or possible import, of absolutely indispensable commodities. The Reichsbank reserved to itself the right of specifying commodities for which no foreign exchange could be obtained. In such directions the efforts of the Reichsbank were effectively supported by the order already issued in regard to the prohibition of the import of dispensable commodities.

The fixing of the rate of exchange was to be effected exclusively in Berlin with the co-operation and concurrence of the Reichsbank. The rates were to be for buying and selling offers. In so far as an official quotation for exchange was then introduced (quotation of rates of exchange had been prohibited since the beginning of the War), it was with the idea that the sale of foreign exchange should be effected on the basis of the official selling rate and the purchase at the official buying rate.

The immediate result of this regulation was a set-back in the upward tendency of foreign exchanges. Though in the first week in January 1916 the exchanges soared, the process was

reversed when the intentions of the government of the Reich became known. The set-back was, however, of but short duration; and it was found possible until the end of 1916 to steady the exchanges to a marked degree in contrast to the previous state of affairs.

The fresh rise in foreign exchange rates during the last months of 1916 impelled the government to attempt to amplify the regulation of the exchanges. By an Order of the Bundesrat, issued on the 8th February 1917, known as the Foreign Exchanges Order (*Devisenordnung*), dealings which were not the result of mercantile transactions were also subjected to the restricting conditions. The order was extended to cover all claims and credits in foreign currency. This was done by restricting dealings in foreign currency, claims, and credits, without the previous consent of the Reichsbank, only to the banks within the limited circle referred to above. Over and above this, the order placed restrictions on transactions in which settlement of foreign payments was made in marks. It had become clear, that in view of the very small quantities of foreign exchange offered on the German market, domestic currency was being used to a considerable extent for payments to foreign countries, even for payments of an undesirable nature, such as for more or less dispensable imports, and for the establishment of credits in foreign currencies in order to escape the control of the Reichsbank. This gave rise to continually increasing offers of German marks on foreign markets, which necessarily had the same serious effect on the German rate of exchange as an unregulated demand for foreign exchanges in Germany itself would have done.

In order to bolt the door upon this procedure the duty of supervising payments in marks to foreign countries was transferred by the order to the Reichsbank. Every transfer of German currency abroad had to be made with the concurrence of the Reichsbank, and it was sought to secure the effectiveness of this regulation by a strict control over the mail and by supervision at the frontiers.

At the same time, however, in order to protect the credit of German nationals and firms dealing with foreign countries, it was necessary not to subject to similar restrictions other avenues of payment. In this connection, the establishment of mark credits in Germany by foreigners, the transfer of already existing mark credits to foreigners, and the withdrawal of such credits and the question of claims in marks by foreigners had to be considered. As the meeting of obligations contracted towards neutral foreigners could not be prohibited, the only possible course was to make the settlement of all obligations contracted with foreign countries subject to the consent of the

Reichsbank. The order confined itself in this matter to the most important spheres in the regulation of foreign exchanges, namely, the settlement of contractual obligations for the purpose of procuring goods or securities, costly articles, all kinds of objects of art and articles of luxury, landed property and ships, as well as the granting of mark credits to individuals and firms in foreign countries.

The supervision and control of foreign exchange transactions, thus broadened in scope and made more strict, was supplemented by the compulsory registration of all foreign currency and money claims on neutral and allied countries. The Chancellor of the Reich obtained power to order that foreign currency and claims expressed in foreign currency should be transferred to the Reichsbank, if the Bank so demanded, at the rate of the day.¹

The Foreign Exchange Order was repealed after the end of the War by an Order of the 23rd July 1919, made public on the 11th September 1919. Dealings in foreign money were not, however, thereby freed from all restrictions. They were, in fact, made subject to such supervision and control as was thought necessary for combating the "flight of capital."

Provisions to this end were contained in the law of the 8th September 1919, directed against such flight of capital. First and foremost, however, the enormous payments which Germany had to make under the terms of the Treaty of Versailles, forced her to make the measures for the control of all claims upon foreign countries arising out of German export much stricter. The duty of delivering up "export bills" was worked out in every detail and took into account every possible aspect, and this secured to the Reichsbank power of control over the bulk of all foreign exchange resulting from commercial transactions. Never before had any central institution in any country been in a position to "control" exchange in any way even approaching this. Nevertheless, as the collapse of the German nation shows, the force of circumstances proved more powerful than any policy of exchange control.

The cup of experience, which Germany had to drain to the last dregs under the pressure of the reparation payments demanded from her, has also been tasted by other belligerent countries and even by neutrals. Apart from the U.S.A., whose currency stands out as the one fixed point unimpaired by the storms of the War, England alone succeeded for a time during the War in giving to her exchange a certain stability, but she only did so by the sacrifice of very considerable sums.

¹ For the information regarding the "Foreign Exchange Order" see Supplements 10 and 11 to the Memorandum regarding Economic War Measures, *Reichstag Publications*, 1914-1919, Nos. 650 and 144.

Even the American dollar experienced remarkable fluctuations during the first stages of the War. Under the pressure exerted by the sudden withdrawal of European, and particularly of English, capital, the American currency fell in relation to that of some European countries—not only in relation to the currencies of neutrals, but particularly also of England—for a time quite considerably below its gold parity.

The gold parity between the dollar and the pound sterling is $4.86\frac{5}{8}$ dollars = £1 sterling. The rate for sterling was quoted in New York on the 30th July 1914 at 5.15. This rate meant a depreciation of the dollar in relation to the pound sterling of about 6 per cent. The following weeks brought a recovery, but until September 1914 the rate for the pound sterling was above par in New York. A decisive swing over took place only towards the end of the year. On the 29th December 1914, 4.8565 was quoted as the lowest quotation for the year.

The German mark also stood above par in New York in the first two months of the War. It was quoted at the end of July at 96 dollars for 400 marks, and the average for September was still 95.7 dollars, with a parity of 95.29. But the revulsion in the case of the mark came earlier and was more marked than in the case of the pound sterling. On the 31st December 1914 the New York quotation for 400 marks was only $88\frac{3}{4}$ dollars. The mark thus stood nearly 7 per cent. below par.

Notwithstanding these oscillations in the very earliest stages of the War, only the American dollar need be considered as a standard for the measurement of the other rates of exchange—both on account of its fixed relation to gold, and also on account of the predominant economic and financial importance of the U.S.A.

Measured by this standard, the rates of exchange of the most important belligerent and neutral countries developed as follows:—

ENGLAND.—The rate for cable transfers on London showed as from the end of 1914 a progressive fall, until on the 1st September 1915 the lowest point was reached at a figure of 4.55, corresponding to a depreciation of 6.5 per cent. At this point the British government intervened with the large resources at their disposal in order to arrest the fall in the rate of the pound, to effect an improvement, and if possible to reach a point of stability. Large amounts of actual gold were sent to the U.S.A., loans were raised with the aid of American financial groups, important commercial credits were taken up, and American securities which had been held by British subjects were resold to the U.S.A. Over and above this, American banking groups willingly gave their support to the English endeavours for the improvement of the English rate of exchange. It was actually found possible to raise the rate of sterling in New York from its lowest point reached at the

beginning of September 1915 to about 4·765 in March 1916, and to keep it at this level, *i.e.* at about 2 per cent. under par, until 1919.¹ On the other hand, a new and strongly marked set-back in the rate for the pound occurred when the British government gave up its policy of stabilising the rate of exchange in New York. The enormous financial sacrifices entailed by this policy could no longer be justified after the end of the War. Accordingly, at the beginning of 1919 the British Treasury at first stopped its purchases of foreign securities for the regulation of exchanges, and in March 1919 the New York firm (J. P. Morgan & Co.), which during the War had acted as the British financial agents in the U.S.A., received the order to effect no more purchases of sterling for the stabilisation of the British rate of exchange. These purchases, made by the intervention and for the account of the English government, aggregated between January 1916 and March 1919 the enormous total of 4 milliard dollars in round figures.² As a result of the removal of these regulative measures, the unfavourable British trade balance, caused by the tremendous importation of goods for the reconstruction of the stocks consumed during the War and for the re-establishment of British industry, exercised its full effect upon the British rate of exchange. The year 1919 ended with the rate of 3·765 dollars to the pound sterling. In the course of February 1920 the rate of the pound in New York went for a time to even as low as 3·20 dollars. This meant a depreciation of the British rate compared with the dollar of fully one-third, or, otherwise expressed, a premium of 50 per cent. on the dollar as against the pound sterling. Since that time a substantial recovery has taken place. By December 1921 the New York rate had risen to 4·22, and at the end of January 1923, the time when this chapter was written, it stood at 4·6856. The depreciation at the moment is, therefore, only about 4 per cent.

FRANCE.—The New York quotation for the French franc fell even lower in the course of 1915 than the quotation for the pound sterling. The par of exchange was 518·25 francs for 100 dollars, and whilst on the 2nd January 1915 the rate stood at 516·50, it was on the 31st August 1915 as high as 604, or about 11 per cent. below par. At this point a recovery took place by reason of the large loan raised in the U.S.A. by France in conjunction with England.³ The recovery was, however, very limited. The

¹ "Financial authorities have been unanimously of opinion that the 'pegging' of the American and English exchanges was the greatest, the most difficult, the most far-reaching in its effects, and the most successful of all the financial schemes embarked on during the War."—E. L. Franklin.

² See *The Financial and Commercial Chronicle* of the 5th April 1919.

³ This loan, issued in the autumn of 1915, was for 500,000,000 dollars.

rate on the 31st December 1915 was 586. In April 1916, although France made great efforts to stabilise its exchange in the same way as England, a rate of 607 was again reached. French efforts now produced a slight recovery to about 583 in the autumn of 1916. In 1917 the entry of the U.S.A. into the War stimulated an active interest by American politics and finance in the raising and stabilisation of the rate for the franc. During the second half of 1917, and up to the end of the summer of 1918, the New York rate on Paris moved with slight deviations from about 573 to about 570. The franc had thus been very nearly stabilised at a level of about 10 per cent. below par. From July 1918 the considerable American payments for the upkeep of the troops sent to France, and the favourable turn of the War for the Allies as a whole, brought an improvement in the French rate of exchange. At the end of 1918 the New York rate on Paris was only 545, the depreciation of the French franc as against the American dollar thus being only 5 per cent. But this improvement was of short duration. The abandonment by England of the policy of influencing the New York exchanges had even worse consequences for France—which country had participated in that policy as far as it could—than for England. Already at the beginning of April 1919 the price of the dollar in French currency was 6 francs, and in December 1919 it had risen to more than 12 francs. In April 1920 it was forced up to more than 17 francs, and, after an appreciable but purely temporary improvement, it reached its maximum at the beginning of 1921 with a figure of 17·18. Then up to the beginning of June 1922 it dropped back to 11 francs, so that at that time the French rate, which had fallen in the course of the years 1920–1921 to less than one-third, was, in terms of the American dollar, depreciated to only half its extent. In the second half of 1922 reparations complications, engendered by France herself, caused a fresh depreciation in the French rate. In January 1923 the occupation of the Ruhr by the French accentuated this depreciation. The French rate again nearly reached the lowest point of the beginning of 1921.

ITALY.—Although Italy only entered the War in April 1915, the Italian rate of exchange was from the outset strongly affected by the War. On the 30th July 1914 100 French francs could be bought for 106½ Italian lire. In the days that followed, the Italian rate was always less favourable than the French. Compared with the American dollar, the lira showed throughout the War an almost uninterrupted downward course, culminating in July 1918 with a rate of 897 lire per 100 dollars, a depreciation of 42 per cent. The current rate of the lira in Paris was then 59·7 and in Zurich 41·37 francs per 100 lire. The improvement

which then occurred in the Italian rate of exchange, bringing the lira to 636 per 100 dollars, was more marked than the contemporary improvement in the rate for most other exchanges. The Italian rate in Paris again stood at 85, and in Switzerland at 74.80. The years that followed, however, also brought a set-back in the course of the Italian exchange which far surpassed the depreciation during the War. At the end of 1920 the Italian rate on New York was 2875, corresponding to a depreciation of 82 per cent. The contemporary rates on Rome in Paris and Zurich were 57.25 and 21.85 for 100 lire. An improvement then occurred more or less to the same extent as in the French rates. In June 1922 the Italian rate on New York was about 1960, and the Paris rate on Rome was about 57.25, as at the end of 1920. Since then the Italian rate has risen further. At the end of January 1923 the lira was quoted in Zurich at 25.40 cents, and in Paris even at 80.40 cents.

NETHERLANDS.—The course of the rates of exchange of European neutrals was very different from that taken by the rates of the belligerent countries. The neutrals were the sources of supply for the belligerents on both sides, and a strong demand for their currencies accordingly developed.

In the upward tendency of their rates of exchange, which was the inevitable result of this demand, the Netherlands took the first place. The rate for the Dutch guilder rose not only considerably above par as compared with the rates of the belligerent States, but was quoted above par even in New York. At the beginning of January 1916 the rate on Amsterdam in New York stood at 44.75 dollars for 100 guilders, which at the par of exchange of 40.14 corresponded to an excess over par of about $11\frac{1}{2}$ per cent. for the Dutch guilder. In the course of 1916 a gradual fall took place to about 41. In the first months of 1917 the rate went back to $40\frac{9}{16}$, so that the Dutch guilder stood at only about 1 per cent. above par. A fresh rise now occurred, and by November 1917 the maximum, which had been reached in January 1916, was again registered at 44.75. In the course of 1918 the Dutch rate rose further to $52\frac{1}{4}$ on the 10th August, a rate which meant that the Dutch guilder stood 30 per cent. above its parity with the American dollar. A rapid drop followed. At the end of 1918 the rate was $42\frac{3}{4}$, and in April 1919 par of exchange was again reached. In the following months the rate even fell considerably below par, and in August 1919 the depreciation was 8 per cent. The downward course of the guilder continued with a few fluctuations up to the end of 1920. At that time a rate of about 31 dollars for 100 Dutch guilders was reached, which was a depreciation of the Dutch exchange as against the American of about 23 per cent. The year 1921 brought an

improvement. In December the highest point was reached with 36·98. Since that time, with but few interruptions, the progressive improvement has continued. At the end of January 1922 the New York rate on Amsterdam was 39·43, and the depreciation of the guilder as against the dollar was not quite 2 per cent.

Taking it all in all, the Dutch guilder is seen to have been rated during the War above par, culminating at a maximum of 30 per cent. in August 1918. In the post-war period, however, the Dutch guilder fell considerably below the dollar parity, up to an extent of 23 per cent. at the end of 1920. Since then it has slowly approached par again. In its broad outlines this process of development is typical of the rates of exchange of the most important European neutrals.

SWITZERLAND.—Just as the Dutch guilder so the Swiss franc also stood above par during the War, not only compared with the rates of exchange of the belligerent States, but also in terms of the American dollar. The development was, however, slower in this case. Up to the second half of 1916 the rate on New York was quoted in Zurich above par—the highest rate being 5·41 francs for a dollar in the middle of March 1915, par being 5·1825. There was thus a depreciation of 4 per cent. below parity. Later, the Swiss exchange went above par and reached, after several fluctuations, although continually above the dollar parity, its highest rate at the end of July 1918 with a figure of 3·965 for the dollar. This meant that it stood at 30 per cent. above par. This maximum of the Swiss exchange in terms of the American corresponded, both in time and in amount, with the maximum of the Dutch rate. Then, as in the case of the Dutch exchange, the position changed. In the second quarter of 1919 the Swiss franc had again sunk to its dollar parity, and in the months that followed fell considerably below it. At the end of 1920 the dollar rate in Zurich stood at 6·565, which meant a depreciation of the Swiss franc of 21 per cent. (the depreciation of the Dutch rate at that time was 23 per cent.). Again, as in the case of the Dutch exchange, an improvement occurred which was even more strongly marked and more rapid than in the case of the latter. At the end of 1921 the Swiss franc went above dollar parity, albeit by a very small fraction, and kept at that level until May 1922, being the highest valued exchange in the world. At the end of January 1923 the rate was 536·25 francs for 100 dollars. This means a turn to the disadvantage of Switzerland of about $3\frac{1}{2}$ per cent.

SCANDINAVIA.—The three Scandinavian countries had at the beginning of the seventies of the previous century combined in a currency union on the occasion of their joint transition to the

gold standard. This union was intended to secure absolute uniformity of their monetary systems, a uniformity which, however, went by the board during the War. As each of these three currency systems in turn lost its gold basis, differences developed between the currencies of Sweden, Norway, and Denmark. We shall content ourselves with tracing the course of development of the Swedish exchange, directing attention to the relation between it and that of the affiliated Danish and Norwegian currencies.

The par of exchange of the Scandinavian crown in terms of the American dollar is 373·14 crowns to 100 dollars. At the beginning of 1915 the dollar rate in Stockholm still stood at 399—that is, the Swedish crown stood about $6\frac{1}{2}$ per cent. below par in terms of America. In the course of 1915 the crown reached and passed the par level. At the end of 1915 the dollar was quoted in Stockholm at 360, and at the end of 1916 at 344. In the course of 1917 this process of development continued, and by the beginning of November the dollar rate reached 234. This meant that the Swedish crown stood at a premium of 55 per cent. as against the American dollar. At that time Swedish currency was valued more highly than that of any other country in the world. Even the Dutch guilder stood at the beginning of November 1917 at nearly 33 per cent. below the Swedish crown. The Danish and Norwegian crowns, which had already in 1916 fallen in value below that of the Swedish currency, registered in November 1917 a depreciation of 17 per cent. as compared with the Swedish crown.

Whilst, however, the Dutch and Swiss exchanges continued their rise in terms of the American dollar until well into the summer of 1918, a set-back in the Swedish rate appeared already in the last two months of 1917. In March 1919 the Stockholm rate on New York was again at par, having reached this level somewhat earlier than the Dutch and Swiss rates. The fall of the Swedish currency continued with greater intensity than that of the Dutch and Swiss currencies. At the end of 1919 the Stockholm dollar rate went to 466, and in the second half of 1920 it even passed by a little the level of 500. This rate meant a depreciation of the Swedish crown as against the American dollar of $25\frac{1}{2}$ per cent., whilst at that time the depreciation of the Swiss currency and that of the Dutch reached their maxima with 21 and 23 per cent. respectively. In the months that followed, the Swedish currency rose to 498 in terms of the dollar at the end of 1921, and to 375 at the end of January 1923. The latter rate meant that the crown stood at only two-thirds per cent. under par in terms of the dollar.

SPAIN.—In the years before the War Spanish currency was always at a discount as against French francs and the gold

standard currencies generally. In the course of 1915 the Spanish peseta reached and passed not only its par of exchange as against the French franc, but also as compared with the English pound sterling. At the beginning of 1916 its parity with the American dollar (19·3 cents for the peseta) was reached. At the beginning of 1917 the New York rate on Madrid stood at 21 cents, at the end of 1917 at 24·1 cents, and at the beginning of June 1918 at 28·4 cents. The culminating point had been reached. In terms of the American dollar, the Spanish peseta was then appreciated by 47 per cent., but even in terms of the currencies of European neutrals the Spanish rate stood at that time quite high. The rate between Amsterdam and Madrid, the par point between which was 48 guilders per 100 pesetas, stood at that time at 58, and the rate between Zurich and Madrid was 116, whereas the par level was 100 Swiss francs for 100 pesetas. The peseta thus stood at a premium of 21 per cent. and 16 per cent. in terms of the Dutch guilder and the Swiss franc respectively.

In this case too a set-back occurred in the second half of 1918. At the end of 1918 the peseta stood a few per cent. below the Swiss and Dutch parity, and only about $3\frac{1}{2}$ per cent. above the American parity. During the year 1919 the Spanish rate kept, generally speaking, above the level of the other European neutrals. In November 1919 the rate for the peseta in Zurich was about 109. At the end of 1919 and the beginning of 1920 the rate between New York and Madrid stood roughly at par. Until that time the Spanish rate stood better than that of other European neutrals, but the set-back which occurred in the course of 1920 was much greater in the case of Spain than in that of the other neutrals. In November 1920 the rate between Zurich and Madrid was only 76. The depreciation of the Spanish rate was then $38\frac{1}{2}$ per cent. in terms of the Swiss. At the time of writing, at the end of January 1923, the rate on Madrid in Zurich is about 83·30, the depreciation of the peseta in terms of the Swiss franc being thus about 16·7 per cent.

JAPAN.—This Far-Eastern empire had accomplished its war aims by the capture of Tsingtau. It is true that it continued, more as a matter of form, to be one of the belligerent countries, but on the whole its position was economically similar to that of the European neutrals and of the U.S.A. until the latter entered the War. By reason of its very large deliveries of goods to the Allies, its trade balance was very active and favourable. The effect on the Japanese rate was that the quotation for the yen in New York was from the beginning of 1917 onwards above the par point of 49·85 cents for one yen. In November 1918 the New York rate on Japan reached its maximum of 54·6 cents, corresponding to a premium on the yen of about $9\frac{1}{2}$ per cent. The Japanese

rates then fell to 50.25 cents at the end of 1919, and to 46.25 cents in April 1920, this being a discount of about 7 per cent. In the following months the Japanese rate of exchange was again for a time above par, afterwards keeping more or less at par in terms of the American dollar.

INDIA.—In virtue of the measures taken since the end of the nineteenth century, and discussed above, the Indian rupee kept steady at its par of 1s. 4d. Up to the middle of 1917 the British government succeeded, notwithstanding the large demand for currency for India, in keeping the rupee more or less stable at this par of exchange. The quotation for Council Bills issued by the India Office in London was until July 1917 1s. 4 $\frac{5}{8}$ d. In the years that followed there was no official quotation for the rupee. When it was restarted it stood at 1s. 4 $\frac{1}{8}$ d. In the following months the government, having regard to the rising price of silver, found it necessary still further to raise the rate for the rupee. It was at first raised to 1s. 6d. in May 1918. The boom in silver which took place in 1919 necessitated further increases. In May 1919 the London rate for the rupee rose to 1s. 8d., and in December 1919 even to 2s. 4d. At this stage it was no less than 75 per cent. above par. The sharp drop in the price of silver in March 1920, however, brought with it a change in the Indian rate, and in the course of 1921 it ultimately reached again its par point of 16d.

GERMANY.—The par of exchange between German and American currencies, on the basis of the Berlin quotation, is 4.194 marks = 1 dollar. The New York quotation was until 1917, 95.375 dollars for 400 marks, but when at the end of 1916 quotations of the Berlin exchange restarted it was 27.69 for 100 marks.

At the outbreak of war the quotation of foreign exchange ceased in Berlin, and it was restarted only at the end of 1916, when the government began to control dealings in foreign exchanges. In order, therefore, to give an outline of the course taken by the German rate, one must have recourse to quotations on foreign exchanges.

In New York the Berlin rate was in July 1914 quoted at 96 dollars for 400 marks—that is, a little above par. The conditions for keeping up its rate of exchange were considerably more difficult for Germany than for the Entente Powers. Germany's sea communications being cut, German exports were hampered, and the difficulties connected with the importation of necessities manifested themselves in considerable rises in the prices of imported commodities. The large profits earned by Germany in peace-time by her sea-transport business vanished. The profits from Germany's foreign capital investments were very greatly reduced by the prohibition on payments and by

German property being confiscated by enemy States. The War deprived Germany of the means by which in peace-time she settled her trade balance, and to make matters worse, the general trade balance itself took a very unfavourable turn. Over and above this, Germany received no such whole-hearted financial support as was from the very beginning given to the Entente States by America. In these circumstances it is not surprising that the rate of exchange for the mark fell soon after the outbreak of war to a much greater degree than did the rate for the pound sterling or for the French franc.

Up to the end of 1915 the mark declined in New York to 76.25—that is, to 20 per cent. under par. The supervision and control of exchange transactions introduced in Germany in January 1916 resulted for some time in a certain steadying of the German rate. But in the month of May 1916 a fresh downward tendency developed. At the beginning of December 1916 the lowest point of this phase was reached with a rate of 65.75. The mark stood at this low point for but a short time, as the German peace offer and the measures to the same end taken by President Wilson awoke hopes of an early conclusion of the War, and caused the mark to rise at the beginning of 1917. Then came the declaration of unrestricted submarine warfare, and the breaking off by the American government of diplomatic relations with Germany. The mark fell this time to under 70 dollars for 400 marks. Early in April 1917, when the United States formally declared war upon Germany, the quotation of the mark in New York ceased.

For the ensuing period, until the quotation of the mark in New York was resumed, a picture of the course of the mark rate can be obtained only by comparing the quotations on Berlin and New York of a neutral exchange. The Swiss quotations are the best for this purpose, and they show the following state of affairs:—

The Zurich quotation for 100 marks went from 84.875 francs at the end of 1916 to 59.775 francs in the second half of October 1917. The then dollar rate of 4.50 francs gives the equation, 400 marks = 53.12 dollars—that is, a depreciation of the mark in terms of the dollar of 43 per cent. A substantial recovery then took place and lasted to the end of the year. The Zurich rate on Berlin went to 85.75. But in 1918, particularly from July of that year onwards, a very considerable decline took place. There was a short period of reaction at the time of the armistice negotiations, but then the downward tendency again set in. The year 1918 closed with a Zurich rate on Berlin of about 60 francs for 100 marks, and as the contemporary dollar rate in Zurich was 4.80 francs, we had 50 dollars—400 marks, or 8 marks for 1 dollar. The rates in Zurich on the 30th June 1919, when the Treaty of

Versailles was signed, were 42·625 on Berlin and 5·435 on New York, and gave thus 28·34 dollars for 400 marks, or 14 marks for one dollar. Thus when the Peace Treaty was signed the mark had in terms of the dollar fallen to less than one-third of its par of exchange.

After the conclusion of peace the fall of the mark went on at an accelerating pace. The lowest point for the time was reached at the end of January 1920. The Swiss franc was then quoted in Berlin at 18 marks. On the 2nd February 1920 the quotation for bills of exchange on New York was resumed in Berlin, and the rate was 103·75 marks for a dollar. The mark had thus fallen to $\frac{1}{2\frac{1}{2}}$ th of its erstwhile dollar value. A rapid improvement then took place, and in May the dollar was quoted at 34·75, but by November 1920 the dollar was again as high as 87·75 marks.

These enormous fluctuations in the German exchange were surpassed by those which took place in the course of 1921. In April 1921 the Berlin dollar rate moved between 63·50 and 68·25 marks. After the German government had in May accepted the London Ultimatum it was necessary to obtain within the next few months a sufficient supply of foreign exchange for the payment of the first milliard gold marks of the contribution now fixed at a definite figure. A large part of this sum, which had to be paid by the 31st August 1921, was raised by the Reichsbank by short-term foreign credits, repayable at the end of the year. In October the Allies' decision in regard to Upper Silesia became known, and this supplied the first real cause of the collapse of the German exchanges. The Berlin dollar rate rose in November 1921 to 310 marks. The mark thus became worth $\frac{1}{7\frac{1}{2}}$ th of its American parity value.

The sudden collapse was followed by a rapid and strong recovery upon the current rumours that the negotiations taking place in London with the view to a revision of the London Ultimatum promised success. They did, in fact, lead to the conference at Cannes. Already in December 1921 the Berlin dollar rate went back for a time to 165·50 marks. The mark thus made up, within a matter of a few weeks, nearly half of its depreciation. January 1922 brought movements between 170 and 210. The months that followed saw a fresh rise in the dollar rate up to 340 marks at the end of March. Then the rate fluctuated violently, the general tendency being downwards. In the first half of June 1922 the dollar rate moved between 270 and 290 marks.

The break up of the Paris Loan Conference (the Morgan Committee), on the 10th June 1922, and the French threats of sanctions, sealed the fate of the mark. In November 1922 the dollar rate of 9000 marks was passed. From the date in May 1921 when the London Ultimatum was accepted

the mark had fallen, despite the recovery in December 1921, to $\frac{1}{78}$ th of its American parity value by June 1922, and by November 1922 it had fallen to $\frac{1}{30}$ th of the value it had in June. From the beginning of 1923 onwards, the occupation of the Ruhr brought in its train a further sharp drop. At the end of January 1923 the Berlin dollar rate passed for a while the level of 50,000 marks. This meant that the mark was now worth only $\frac{1}{12,500}$ th part of its gold par value, and it was less than $\frac{1}{180}$ th of its value in June 1922. Since then a relatively strong reaction to this excessive upward movement has set in. In the middle of February 1923 the Berlin dollar rate again reacted to 22,500 marks.

EAST EUROPEAN EXCHANGES.—With its most recent depreciation the mark has fallen considerably below the level of even most of the so-called "Eastern" exchanges. Russia alone, whose money has become completely valueless, holds a record not reached by any other currency. The Austrian crown, which was at the time of the signing of the Peace Treaty of only half the value of the mark—it was quoted in July 1919 at about 45 pfgs., as compared with the peace-time par value of, in round figures, 85 pfgs.,—fell for a time below 2 pfgs. in the days that followed. Whilst, however, the fall in the Austrian rate has been arrested since August 1922 by international credits, purchased at the price of her sovereign rights, the German rate of exchange has from that very time, as it happens, undergone a catastrophic collapse. In Berlin the Austrian crown reached for a time, at the end of January 1923, a rate of 66·3 pfgs.

The rate of exchange of the Czecho-Slovakian currency, which until 1922 was at par compared with the mark, and even for a time a little below that level (85 pfgs. for the crown), now towers high above the mark. At the end of January 1923 it was worth 1350 marks—that is, 1600 times the par value. The exchanges of the Balkan States are also worth 100 times their par value in marks. Even the Hungarian crown, which at times stood even below the Austrian, was quoted in Berlin at the end of January 1923 at 18·10 marks, or more than twenty times its pre-war parity. The Polish mark, which at times was worth not much more than 2 pfgs., went for a time at the end of January 1923 to a premium of $10\frac{1}{2}$ per cent. as against the German mark. (In the second half of February 1923 the rate for the Polish mark was again only 45 to 50 pfgs.)

The two subjoined statistical tables show the position of the rates of exchange of the most important countries compared with the German mark and the English pound sterling at the end of January 1923.

The effects of the divergences between the various rates of

exchange at any given point of time are intensified by the very considerable fluctuations which took place during specified periods even under the most favourable circumstances.

Approximate stability on the basis of erstwhile gold parity has been established at the time of writing in the fifth year after the conclusion of the War between the currencies of the U.S.A., Canada, Sweden, Holland, India, Switzerland, Mexico, Egypt, England, and the Argentine. Spain, Denmark, and Norway follow at a little distance. Then there is a wide gap before we come to the group of France, Belgium, and Italy; then to Czecho-Slovakia, Turkey, Greece, and the other Balkan States and Hungary. Far below in the abyss come Germany, Poland, Austria, and Russia.

Position of the German Rate of Exchange on the 31st January 1923

Rates on	Par.	Rate.	Percentage of Pre-War Par Value of Mark.
New York	1 dollar = 4.198 marks	49,000	0.0083
Stockholm	1 crown = 1.125 "	13,100	0.0086
Amsterdam	1 franc = 1.687 "	19,325	0.0087
Zurich	1 franc = 0.81 "	9,140	0.0089
London	1 pound = 20.43 "	227,500	0.0090
Yokohama	1 yen = 2.092 "	22,450	0.0096
Buenos Aires	1 peso = 1.782 "	17,950	0.0099
Madrid	1 peseta = 0.81 "	7,490	0.0108
Copenhagen	1 crown = 1.125 "	9,275	0.0121
Christiania	1 crown = 1.125 "	8,975	0.0125
Rio de Janeiro	1 milreis = 1.36 "	5,250	0.0260
Paris	1 franc = 0.81 "	2,885	0.0281
Brussels	1 franc = 0.81 "	2,550	0.0318
Rome	1 lira = 0.81 "	2,310	0.0351
Prague	1 crown = 0.8506 "	1,350	0.0630
Helsingfors	1 Fin. mark = 0.81 "	1,118	0.0668
Constantinople	1 lei = 18.45 "	24,275	0.0760
Athens	1 drachma = 0.81 "	480	0.1687
Agram	1 dinar = 0.81 "	417.50	0.1940
Sofia	1 lewa = 0.81 "	275	0.2909
Bucharest	1 lei = 0.81 "	135	0.6000
Budapest	1 crown = 0.8506 "	18.10	4.6960
Warsaw	1 Pol. mark = 1 "	1.105	90.5000
Vienna	1 crown = 0.8506 "	0.663	128.4000

Exchanges in London on the 31st January 1923

Exchange on	Par.	Rate.	Value of Foreign Rate in per cent. of Pre-War Parity.
New York	£1 = 4.86 $\frac{5}{8}$ dollars	4.62 $\frac{3}{8}$	105.24
Stockholm	£1 = 18.159 crowns	17.365	104.57
Montreal	£1 = 4.86 $\frac{5}{8}$ dollars	4.67 $\frac{7}{8}$	104.00
Bombay	16d. = 1 rupee	16 $\frac{3}{8}$	102.88
Amsterdam	£1 = 12.107 gulden	11.78 $\frac{7}{8}$	102.79
Yokohama	24.58d. = 1 yen	25 $\frac{1}{32}$	101.72
Mexico	24.58d. = 1 dollar	25.—	101.71
Switzerland	£1 = 25.225 francs	24.86	101.47
Alexandria	£1 = 97 $\frac{1}{2}$ piastres	97 $\frac{1}{2}$	100.—
Buenos Aires	47 $\frac{7}{8}$ d. = 1 gold pesos	43.50	91.72
Montevideo	51d. = 1 gold pesos	43 $\frac{1}{2}$	84.74
Madrid	£1 = 22.5 pesetas	29.88	84.45
Copenhagen	£1 = 18.159 crowns	24.25	74.88
Christiania	£1 = 18.152 crowns	25.05	72.49
Rio de Janeiro	16d. = 1 milreis	5.97	37.31
Valparaiso	£1 = 13 $\frac{1}{2}$ gold pesos	37.—	36.03
Paris	£1 = 25.225 francs	79.75	31.65
Brussels	£1 = 25.225 francs	90.05	28.01
Italy	£1 = 25.225 lire	99.25	25.41
Prague	£1 = 24.02 crowns	160.—	15.01
Constantinople	£1 = 110.— piastres	750.—	14.67
Helsingfors	£1 = 25.225 Fin. marks	184.50	13.34
Athens	£1 = 25.225 drachmas	385.—	6.55
Belgrade	£1 = 25.225 dinars	525.—	4.80
Sofia	£1 = 25.225 lewa	775.—	3.25
Bucharest	£1 = 25.225 lei	1162.50	2.17
Budapest	£1 = 24.02 crowns	12.250	0.19
Warsaw	£1 = 20.43 Pol. mark	145.000	0.014
Berlin	£1 = 20.43 marks	220.000	0.0093
Vienna	£1 = 24.02 crowns	335.000	0.0072

The chaos in the currencies shows in convincing form that in the catastrophe brought about in the international monetary organisation, the senseless provisions of the Treaty of Peace and the continuation of the War by other means, even more than the actual War disturbances, have had their evil share. No one can foretell how far things may yet go if the acts of violence on the part of the victorious countries do not give way to acts of economic and financial sanity.

PART II

THEORETICAL

§ I. MONEY IN ECONOMIC LIFE

CHAPTER I

ECONOMIC CONCEPTION OF MONEY

¶ I. General Remarks regarding the Definition of Money

THE definition of the concept of money has always been a difficult problem in the theory of political economy. Generally speaking, what is meant by money is something presented as a clear and definite image to the mind's eye, but difficult to embody within the compass of a short formula. When we come to examine it more closely, we find money taking on such a variety of forms, and fulfilling functions so manifold in their nature, that in proportion as we gain perception of these manifestations we risk losing sight of what is common ground and what is essential in this extensive complex of ideas. Hence it comes about that while many definitions of money have been framed, there is not one which has gained universal acceptance.

Most definitions of money take as their basis not its substance, but its functions; and, to all appearance, this is as it should be. For, as has already been shown in the historical part of this work, money is not a thing *sui generis*—at least not necessarily so. On the contrary, one and the same object can be money, while fulfilling certain definite functions in the economic scheme, but ceases to be money when fulfilling other functions. Certainly, we have seen that the process of evolution of money tends to produce a separate entity in which the functions of money are embodied. Thus, for instance, we have seen that, as a rule, metallic coinage performs only monetary functions, and paper money, by its very nature, cannot serve any purposes but those of money. But in modern monetary systems, in so far as metal is still their basis, this process of evolution is still far from completion. The rule that the precious metals in the form of coin function only as money has its exceptions. Even to this day we find coins, which are in every way adapted to be used as money, sometimes used as ornaments; and when a goldsmith puts coins by, not in order to pass them on at some later date, but as raw material for the crucible, the coins cease to be money. In international commerce it is absolutely impossible to discover from the form in which the precious metals occur whether they are money

or not. Here the metals, both coined and in their crude state, are found functioning side by side. Large payments are made in gold bars or ingots, whereas at the same time coined money is very often the medium used by industry.

For these reasons the basis of a definition of money cannot be its substance or the form in which it appears, but only its functions. Any particular object is money in so far as it is the vehicle of certain functions. These are discussed in detail below.

In this connection, however, a frequent error must be avoided. In order to arrive at a definition of money, attempts have at times been made to ascertain all the functions which money performs in our economic organisation—either exclusively or in conjunction with other goods. As a work of preparation this procedure is certainly justifiable, but we cannot admit a mere stringing together of separate functions to be a correct definition. For we find upon closer examination that these various functions are in part derived from one basic function, and that they are only in part in a regular—or even only incidental—connection with the functions which are theoretically essential. In so far as this is the case, these functions are not proper to a definition, which should include only the fundamental characteristics of the phenomenon to be defined, and should not include derivatives and incidental items of secondary importance.

There are only two methods by which the fundamentally essential characteristics can be established. We must either take the various functions as our starting point, scrutinise each one separately, examine whether it is essential or not, study its relation to the other functions, and aim at establishing the fundamental characteristics of money by excluding what is not essential and fundamental; or else we must take as our starting point our whole economic organisation, and discover the precise position which money occupies in that organism.

We shall, first, take the second method. The investigation of the individual functions of money which we shall have to undertake later will, to some extent, test the efficacy of both.

¶ 2. The Position of Money in the Economic Organism

Economic goods can be fundamentally differentiated by ascertaining whether they are objects of direct consumption—that is, objects which in themselves satisfy human wants,—or whether they are only the means for the production of consumable goods and for the transfer of these towards points of consumption. Goods in the latter class are related to those in the former as means are to an end, and they can be designated as “intermediary,”

as distinguished from "consumption" goods.¹ They are divisible into several groups:

1. Means of production in the narrow sense—that is, goods such as raw materials, auxiliaries, tools, etc., which serve for changing a given substance into a form in which it can be used. Such are cotton, wool, ores, metals, wheat, coal, and also tools, machines, etc.

2. Means of transport—that is, goods and arrangements which effect the transfer of goods to a place where they can be used, either temporarily or finally, either by their employment in processes of production or for consumption. To this class belong vehicles, ships, railways which carry corn from the soil to the mill, flour from the mill to the baker, bread from the baker to the consumer; which bring the cotton from the plantation to the spinning mills, yarn from the mills to the weaver, cloth from the weaver to the tailor, and finally the finished clothing to the wearer.

These two classes of "intermediary" goods make their appearance as soon as man emerges from merely occupational to productive activity—that is, as soon as he ceases to be content with consuming only those commodities which nature freely supplies on the spot where he finds them. We find "intermediary" goods as soon as man begins to interfere with the processes of nature and to take part methodically in the production of commodities. Means of production and means of transport could not be dispensed with in any future society organised on socialistic or communistic principles, and recognising no private property. These two groups of "intermediary" goods are conditioned by the basic fact which governs human economy, namely, the participation of man in the production of goods which serve as means of satisfying needs.

3. Contrasted with these groups of "intermediary" goods there is a third group of economic objects, for which there is no need in any primitive or communistic society.

This is the group which we observe immediately when considering economic phenomena in a society such as ours, a group which can be covered at first sight by the term "money."

This third category rests on the combination of two basic factors, which are not essential to all economic systems, but are certainly so to our present system. They are the division of labour and private ownership.

Wherever division of labour exists, every man produces but

¹ Roscher differentiates between goods of the first class, or goods of direct use and consumption, and goods of the second class, or production goods. Others adopt a similar classification. Dietzel differentiates between economic objects and the means of economic intercourse.

a small part of the goods which he requires for the satisfaction of his own wants. Most of the goods which he requires for his personal needs, or for the purposes of his economic activities, are produced by others. Where, in addition, private ownership both of means of production and of consumable goods exists, the "intermediary" goods and the supply of labour needed by undertakings, and the consumable commodities needed by individual consumers, can be transferred from their proprietor and placed at the disposal of the *entrepreneur* or consumer only by a process which we designate as "economic intercourse," which transfers ownership or control from one person to another (interpersonal as distinguished from interlocal intercourse). In what follows below, the terms "economic intercourse" or "trade" will be used exclusively in this sense.

For intercourse in this sense the combination, already mentioned but again emphasised here, of division of labour and of private ownership forms the basis. One of these factors alone is not sufficient. Where there is no division of labour, where every man independently produces everything that he needs, no reason exists for economic intercourse or trade. Again, where there is division of labour, but where there is no private ownership, that is, where everything which the individual produces on the basis of division of labour is produced by the use of means of production owned by the community, the products also being owned by the community and distributed by the community amongst the individuals, there we may in point of fact have an organisation for regulating the distribution of goods, but no economic intercourse between individuals.

The institution of money has grown out of economic intercourse or trading, which evolved with the process of time into our economic organisation. Just as man found himself obliged to facilitate his work and to make it more effective by using "intermediary" goods when changing the form and constitution of raw materials as well as the place in which the goods were situated, so also the employment of "intermediary" goods was forced upon him in connection with the transfer of commodities from person to person. The difficulties of direct trading, most clearly shown in barter, could be overcome only by the introduction of connecting-links of both a material and a personal nature. The personal connecting-link in economic intercourse is the trader, the material is money.

The trader procures commodities in order to sell them again. Those who need goods of a particular kind are not obliged first to find a producer who happens to have these in superfluity. All that is required is to turn to the merchant whose calling consists in his being ever ready to place at the

disposal of any consumer the goods needed by him. At the same time, those who desire to dispose of goods find in the merchant a ready acceptor, because his requirements are not limited by his own personal wants, as his calling consists in purchase for resale. The dealer is simply the intermediary in economic intercourse—a focus to which supply and demand converge from all directions, a focus which accordingly facilitates for individuals the acquisition of what they need and the disposal of what they do not need.

The “intermediary” position of money is similar. Just as the trader obtains goods in order to dispose of them again, so is money obtained by every man in order that he may be in a position to dispose of it again. From this it follows that for the trader all the things in which he trades are as money is to ordinary individuals. On the other hand, money is to every man what merchandise is to the trader. Everyone is ready, and, generally speaking, even compelled, to sell in exchange for money, because other goods and services can be procured by him—if not exclusively, at least to a much surer and greater extent—in exchange for money than in exchange for other values. The desired result is generally reached more quickly if sales are effected in exchange for money and if the commodities needed are purchased for the money thus obtained. All supply converges on money, and all demand emanates from money. Just as the dealer in his personal relation, so money in its material relation stands at the focus of supply and demand. Just as the dealer is the intermediary person or middleman of economic intercourse, so is money the intermediary object or the instrument of economic intercourse. But there is this distinction between money and traders. Money acts as a medium not only in two-sided transfers in which one commodity is given in exchange for another, but also in the innumerable unilateral transfers of values such as, for instance, the payment of dues and of taxes, which are a concomitant of the existing economic and legal organisation of society.

All this, as already mentioned, explains but one function of money. Nor is money an abstract function devoid of all material embodiment. Far from being abstract, it is encountered in all economic systems and spheres of economic activity as a series of concrete objects. We designate as money the entire complex of those objects which fulfil the function established above, and do so, not occasionally and in subsidiary fashion, but regularly and as denoting their ordinary purpose. Only then do we see the evolution of money completed, and speak of it as money in the full sense of the word, when definite objects—such as coins and notes,—recognisable by exterior characteristics, fulfil as their normal purpose the special function of the medium of economic

intercourse. This does not, of course, exclude the possibility of their being withdrawn in exceptional circumstances from the performance of these purposes and used for others. It also does not exclude the occasional employment as a medium of economic intercourse of objects whose primary purpose lies elsewhere.

We understand, therefore, by the term "money" the complex of those objects which in a given economic area and in a given economic system have as their normal purpose the facilitation of economic intercourse (or the transfer of values) between economic individuals.

With this definition we establish the position of money in the sphere of economic phenomena as a third group of "intermediary" goods, in addition to the first two groups consisting of the means of production in the narrow sense of the word and to means of transport respectively.

This specification of the position of money in economic life can be justified by a comparison with that adopted by other writers on money.

In connection with the usual division of the processes of our economic life into three categories:—production, distribution, and consumption—money has been represented by some writers as an independent series of economic objects, the function of which is the distribution of goods, *i.e.* a third series of objects which stands in contrast to the two series of agents of production and of consumption goods; by others money has been placed within the concept of "capital"—that is, it has been regarded as one of ten or twelve co-ordinated subgroups of agents of production. Knies,¹ who adopts this latter grouping, as against the more generally accepted line of subdivision, bases his classification not only on the threefold division of economic phenomena, already referred to, but also on the fact that "an act of sale and purchase is in itself not an act of production of commodities, but one of (interpersonal) transfer of goods." A person possessing money has only the wherewithal for obtaining goods which have already been produced by someone else, and the money paid away for those goods has no effect whatever on what is done with those goods afterwards.

In this question of grouping, everything naturally depends on what is understood by the conceptions of "production" and "distribution." If by "distribution" we understand the transfer, for consumption by separate individuals, of commodities which are already in a state ready for consumption—that is, if we adopt a division of the final results of the processes of production as between the various members of the economic unit, and only in this sense of the word can the distributive process be co-ordinated with the process of production—then money, in our economic organisation, is decidedly more than a mere means of

¹ Knies, *Geld und Kredit*, sec. 1, "Das Geld," 2nd ed., 1888.

such distribution. There are innumerable and important groups of phenomena in economic intercourse which are facilitated by the use of money but without doubt belong within the circle of processes of production. Such are the processes which bring together goods, utilities, and services for the purpose of production, and those which place factories, machines, raw and auxiliary materials, and labour at the disposal of the *entrepreneur* for the purpose of production. In these cases, money is the medium of effective co-ordination between the forces of production and the agents of production for the purpose of organising that production. Its function is, in a certain sense, analogous to that of transport, which, like money, serves not only to bring the final product to the ultimate user, but also to unite in point of place agents and forces of production.

While we see that means of transport have always been regarded without question as a category of "capital"—that is, of created means of production,—we come to the question of how this concept of "production" is to be defined. If we confine this concept to the systematic transformation of raw materials for the purpose of obtaining greater utility, then it is clear that means of transport are just as little "means of production" as is money. Varying but slightly the reasoning of Knies quoted above against the classification of money under the heading of "means of production," we can object to the classification of means of transport under this heading on the ground that transport is in itself not an act of production, but one of (inter-local) transfer of commodities. Change in the form of the goods is effected by transport just as little as it is by the change of ownership resulting from the passage of money from one person to another. If, then, we take the definition of "production" in the above narrower sense, we should have to exclude from the sphere of "means of production" and also from that of "capital" not only money, the instrument of interpersonal transfer of commodities, but also means of transport.

Even if we desire to disregard the criterion of transformation of the substance as being essential to the concept of production (and thereby also essential to the concept of capital), but regard as a decisive factor the fact that a commodity obtains a higher value by economic activity directed towards it, though it remains thereby unchanged in its constitution—even then, nothing essential is altered in the analogous position of means of transport and of money in regard to the concept of production and of capital. It is true that it is the economic purpose of transport to carry goods from one place to another in which they are more useful, and are accordingly of greater value; but in the same way it is the purpose of interpersonal transfer of goods

to bring them from one person to another for whom they have a greater degree of utility. As will be fully discussed later, not only does transport arise from the fact that a difference exists in the values of one and the same commodity in two different places, but every exchange has its basis in a difference of values in the estimate of the exchanging individuals of the goods to be exchanged. On the wider definition of the concept of production, money, as well as means of transport, falls within the scope of means of production and within the concept of capital.

In order not to be inconsistent, we must either reckon money as well as means of transport amongst means of production, or else we must place side by side with means of production not only money as a means of interpersonal transfer of commodities, but also means of transport as means of interlocal transfer of commodities, and in each case as an independent class. If we proceed on the former lines, then we employ the term "means of production" in a wider sense, and if on the latter, we employ it in a narrower sense. In order to be as clear as possible in our terminology, we consider it advisable to use the words "means of production" only in the narrower sense, and to use for the wider meaning the term "intermediary goods."

The position of money in regard to "capital" is also clearly explained by the above remarks. If we include all the "created means of production" within the concept of capital, then there can be no doubt that, having regard to the usual meaning attached to the word in economics (even though there may be slightly different meanings of the word in the works of the various economists), we are in this case using the concept of means of production in the wider sense, and then money forms a subgroup of capital in the shape of a medium of economic intercourse, side by side with means of transport and of production in the narrower sense.

In so far as this general determination of the concept of money is concerned, we can scarcely go further, if we do not wish to split up the concept of money into the various individual functions of money, or to regard as essential to the conception those characteristics which are derived from the historically changing organisation of monetary systems.¹

At the same time the special position which money occupies in the sphere of economic goods is sufficiently explained by these general definitions. It is differentiated from all other commodities

¹ Knapp regards only "chartal pieces" as money. It is true that the monetary systems of modern States, systems which are regulated by statute, recognise as money only pieces possessing specific characteristics to which specific validity has been assigned. If, however, we wish to obtain a concept of money which is quite general and derived simply from the fact of the existence of an economic society, of division of labour and of private property, then a definition narrower than that given above is not possible.

which enter into economic intercourse, which are known as "goods," by the fact that, generally speaking, it is not obtained for the purpose of consumption or continuous employment—that is, not for its own sake, but as a means whereby goods actually needed can be procured. Its basis is in fact to be found in the general willingness of owners of goods to part with them—a willingness which amounts to necessity—in return for money, which can in turn be given up to other economic persons who have at their disposal the goods, utilities, and services which are needed by the owner of money.

All this is so clear that the discussion as to whether or not money falls within the term "commodity" becomes pointless. Such a discussion would be a mere terminological argument.

If by the word "commodity" one understands goods, not produced and consumed in one's private economy, but such as emerge from the sphere of personal production into that of economic intercourse, *i.e.* are thrown on the "market" in order to change ownership by the process of exchange for other values, then money is a "commodity," *κατ' ἐξάχην*; for the whole purpose of money consists in its remaining in economic circulation, and continually changing its owner. If, however, by the term "commodities" are to be understood only such goods entering into economic intercourse as are directly demanded by individuals for use and employment in their economic activity, or for the direct satisfaction of wants, and the transfer of which is effected by means of money, then money may certainly be considered as "the very opposite to economic goods" (R. Hildebrand).¹ Even those who hold the view that money is a commodity do not deny the special characteristics of money as contrasted with all other economic goods. The original purpose of their view was far different. Some had held that money was no object of value, but merely a "token of value," only a carrier of demand for other objects of value, and that it had no real but only a "fictitious" value. It was in order to combat this view that the opposite contention, that "money is a commodity," was put forward, so as to establish the reality of money as an independent object of value whose worth is subject to the same laws as is that of all other economic objects. This problem will be discussed more fully in a later section.

¶ 3. Application of the Concept of Money to the various Forms in which it is found

Before we establish the relation in which the individual functions of money stand to the special position, explained in the

¹ R. Hildebrand, *Die Theorie des Geldes*, 1883.

previous paragraph, which money occupies in the general economic organism, we must investigate the manner in which that concept of money is connected with the concrete forms in which money appears. We must see whether, on the one hand, this concept embraces all the forms in which money occurs, and whether, on the other hand, it would not apply equally to other things not generally regarded and treated as money.

This investigation strikes against the special difficulty that money is not an object as such, but is only the carrier of certain specific functions. It is true that the evolution of money has gradually led to money functions being performed preferably, or almost exclusively, by objects with certain definite characteristics. But there still remains—at all events in the existing state of economic organisation in general and of monetary institutions in particular—a certain residuum, in that objects which regularly perform the functions of money can, at least in part, be withdrawn from their normal sphere and be put to other uses; also that, on the other hand, the performance of the functions of money sometimes falls to the share of economic objects whose real purpose and *raison d'être* are quite different. However clear we are as to the functions of money, we may at times be in doubt as to exactly what objects can be designated as money. We find this also in the definition given above, in which “money” is taken to consist of all those objects which subserve, in a given economic sphere, and in a given economic organisation, the ordinary purposes of a medium of economic intercourse between individuals. It may be argued that, in so far as this definition is concerned, the expression “ordinary purpose” is not characterised by any degree of exactness. But the definition corresponds only to the concept which was to be defined, a concept the limits of which are, for reasons already explained, movable and not fixed.

If, then, we apply this definition to the concrete forms of money and to the objects allied thereto, it must first be clearly pointed out that we are concerned at this stage with purely economic, and not with legal aspects, for the definition given above refers simply to the economic concept of money.

The various types of objects of economic intercourse which have to be considered as performing the functions of money, whether normally or only occasionally, may be divided into the following groups:—

1. Coined metallic money.
2. Paper money issued by the State or by other public bodies.
3. Bank notes.
4. Cheques, bills of exchange, and similar documents.
5. Postage stamps, coupons, stamps of co-operative societies, etc.

Metallic money in the form of coins is, as a rule, regarded as the classical form of money. In the historical part of this book we showed that the monetary function was first embodied in the coin, and that money came, by its coined form, to be distinguished outwardly from all other economic goods. This first clear separation of money as a thing apart from the other goods of economic intercourse to this day to some extent attaches to coin. Coins to-day are the only form of money to which, by universal consent, theory assigns the character of money. Nevertheless, it is well to draw attention to the fact that types of coinage have existed at all times, the monetary character of which was not always beyond question, even within the State which coined them. Coins have even existed which none could consider as possessing the characteristics of money. Such were the "trade coins," struck for purposes of trade with foreign States, as, for instance, the Austrian Maria Theresa taler. Notwithstanding their coin form no one regarded these as Austrian money, although they were produced at the same mints which coined the gulden and kronen currency recognised as Austrian coinage. And why was this so? Because these trade coins did not in Austria itself serve the ordinary purpose of a medium of economic intercourse between individuals. Testing our definition by this exception, we do not find it lacking. Thus it is not the outward form of the coin which gives it the definite character of money, but its designation for the performance of a special function.

The views as to the character of paper money issued by States and other public authorities differ considerably. While some recognise State paper currency as money in every sense, others dispute the proposition, because paper currency has no intrinsic value, but, whether convertible or not, derives such value from metallic money. These views are held when either intrinsic worth is regarded as essential to the conception of money, or when the possibility of functioning as a measure of value is denied to objects which have no intrinsic worth. Others again introduce a legal factor into the question of the economic character of paper currency, asserting that paper money which has been made full legal tender is actually money, but that paper money which is not legal tender is not money.

Still more marked are the differences of opinion in regard to the monetary character of bank notes. In so far as bills of exchange, cheques, and similar instruments are concerned, as well as postage stamps, coupons, etc., which are sometimes employed as money, these are generally regarded as not falling within the concept of money. The bank note, which, as long as it is legally convertible, is in its form a claim to a specified quantity of money, has frequently led to the conclusion that

the note itself cannot be money, although it actually performs the same functions as money, at least in part. A. Wagner argues that bank notes have the same character as cheques, coupons due for payment, bills of exchange payable at sight, etc., which, at times, perform certain of the functions of money. The argument that there is a difference between the instruments of credit just mentioned and bank notes is scientifically untenable, as both bank notes, cheques, bills, etc., represent money only in its function of a medium of exchange and circulation, whilst the function of a measure of value they quite definitely derive from money.¹ Some, in considering the bank note, would make its money quality dependent upon the property of legal tender, with or without any suspension of convertibility. Still others regard the bank note as money, in view of the actual services it renders in economic intercourse, and in view of the circumstance that the commercial world regards metallic currency, paper money, and bank notes equally as cash, irrespective of any question of convertibility or of legal tender powers.

In accordance with our definition, the question whether to include under money the various instruments of credit, and the paper tokens under discussion, can hardly be debated.

To begin with, there is nothing inherently objectionable in including a claim or obligation of payment of any kind under money. For such claims and obligations may also serve as instruments of economic intercourse between individuals, especially as media of exchange, and may perform the basic function of money. This possibility does not exclude the non-possession of so-called intrinsic value, because in the modern form of paper currency the requirement that money must necessarily have its own material value simply cannot be upheld. Furthermore, as far as the argument is concerned that paper and bank notes which are based upon actual money cannot be measures of value, it must be pointed out that (quite apart from the question whether the function of a measure of value is essential to the general conception) in a monetary organisation which is usually regarded as normal, in which the individual types of money produced from different materials are definitely related to each other and are mutually interchangeable, the single type cannot be the measure of value, but only the unit of the system. In such a unit all the types—whether gold, silver, nickel, copper, or paper—are expressed. Thus, for example, no one denied the quality of money to the German 5-mark piece, notwithstanding that its intrinsic value was of no importance in so far as its actual money value was

¹ Adolf Wagner keeps to this view even in his last work on money (*Sozialökonomische Theorie des Gelds und Geldwesens*, Leipzig, 1909). See, in particular, p. 135 *et infra*.

concerned; nevertheless, as in the case of the bank note, it derived its value as money from the gold coin of the Reich, and could not, therefore, be an independent measure of value.

Nor is the argument convincing that documents which are claims to money cannot in themselves be money, quite apart from the question, which we must leave open for the present, whether in the case of paper money tokens controlled by State legislation, we are in any way dealing with "claims" in the general sense of the word. Within the sphere of commodities which represent money we can very easily distinguish different types, some of which represent claims for money of other types. Convertible paper money, bank notes, and other money tokens of this kind need not then be claims to money simply, but only claims to a specific type of money, and this does not preclude their having their own monetary character.

If, then, we regard as established the possibility that claims and obligations to pay in any specific kind of money can be money, then we come to the question of how far one or other of the particular paper tokens is actually money in our economic organisation.

Taking it as a criterion of these phenomena that those objects of economic intercourse should be regarded as money the ordinary purpose of which is to be an instrument of interpersonal transfers, and considering the factor which gives rise to individual paper tokens expressed in amounts of money, we reach the conclusion that State paper notes and bank notes must be included within the sphere of money, but not cheques, bills of exchange, ordinary bank drafts, coupons, postage stamps, stamps of co-operative societies, and similar instruments. We need not waste words in dwelling upon the fact that the usual purposes of coupons, dividend warrants, postage stamps, etc., are altogether outside the basic function of money. Their occasional employment as means of payment, instead of for drawing interest and dividends or for franking letters, does not, having regard to what is clearly their normal purpose, transform them into money either from the general economic or the legal point of view. More difficult, it must be admitted, is the question regarding the other documents expressed in terms of money. Bills of exchange and cheques on the one hand, State notes and bank notes on the other, to a very large extent perform similar functions. Especially in the case of bills of exchange and bank notes, there is between them in the structure of modern banking a direct or organic connection.

A more exact investigation, however, brings to light the following differences:—

State notes and bank notes have the undoubted and exclusive purpose of serving as a medium of circulation, just like metallic currency and side by side with it, possibly at times replacing

metallic currency, irrespective of whether they are expressly given the privilege of legal tender or not, or whether they are convertible into metal currency or not. The motive of their issue is not necessarily to be found in the monetary system; it may be due to the State or the bank desiring to be able to borrow without interest by this expedient. But this object is fulfilled only in so far as the paper remains in circulation, and then it has no other function than that of being the medium of interpersonal transfers. In issuing interest-bearing State loans also the financial authorities of the State are impelled by the desire to obtain financial means. The latter is only possible by the issue of some kind of bonds which for their part must fulfil some useful purpose for the public. The importance of State loans to the public lies in their being a secure and interest-bearing means of employing available capital. In the case, however, of paper currency and of bank notes, which earn no interest, their importance to the public lies in their functioning as ways and means in commerce.

On the other hand, in so far as bills of exchange are concerned, it is clear that their normal purpose is to be found in the special security which they offer, because they imply a claim of some kind or other falling due for payment at a relatively early date. The bill can fulfil its normal purpose without being the medium of even a single transfer or single payment, by remaining in the possession of one and the same person from the day of its issue to the day on which it becomes due. Even when the bill is put into circulation, its period of circulation is closely limited in advance by the fixing of the date when it falls due, whereas in the case of bank notes and of State paper money there is no restriction whatever of the period during which they can circulate. That the bill of exchange, by reason of its being a particularly secure form of bond with a proximate maturity, can also be a medium of exchange, that is, of transfer of wealth, is in essence of as little relevance to its being money as the use, for other reasons, of postage stamps for purposes of payment. The difference between it and the bank note, which exclusively serves the purposes of circulation, is one of principle; the difference between it and the postage stamp—in so far as this latter is used as money—is one of degree.

It is the same with the cheque and similar drafts or orders. The ordinary purpose of the cheque is not the discharge of monetary functions. Rather is it an order to pay made out by a merchant or by some other economic agent on the bank which acts as his treasurer. This purpose is obviously different from that of a medium of payment *per se*. But just as the bill of exchange, so the cheque, *can* perform the functions of a medium of exchange

or payment. The difference between the cheque and the bank note, which latter exclusively serves the purpose of a medium of exchange or payment, is, however, very clear.

By its very nature the cheque cannot remain in circulation for any length of time, as in the meantime the credit account on which it was drawn may vanish, or the bank might close its doors and the cheque become worthless. It is because these conditions are recognised, that business customs and the legislation of most countries require the presentation of a cheque for payment within a few days after it is drawn.

The difference in the normal purpose of the forms of paper considered above finds expression in the purely external characteristics that State paper currency and bank notes can be incorporated in the monetary system by being, like coins, expressed in round figures, whereas bills of exchange and cheques, in view of the specific purpose for which they are created, are expressed in terms of whatever amount gave rise to them. Further, paper currency and bank notes are printed notes of one or more uniform types. Every bill of exchange or cheque, however, is a thing unto itself. There are essential differences of a legal kind also, derived from the divergent purposes of these documents, but these differences will be explained later. Here we need only point out that Government paper money and bank notes can, unlike bills of exchange and cheques, be transferred without any formality, and that, should the State or bank not meet them, no liability whatever rests upon any of their former owners.

If we include State paper currency and bank notes within the scope of money and exclude bills of exchange, cheques, drafts, postage stamps, etc., we proceed in full conformity with ordinary usage and general business opinion and practice. This limitation follows necessarily from our conception of money as the complex of commodities, possessing, as its normal purpose, the function of being the medium of interpersonal transfer of values. Thus we have an important confirmation of the correctness of our conception.

CHAPTER II

OBJECTS AND PROCESSES OF ECONOMIC INTERCOURSE

¶ 1. The Objects of Economic Intercourse

IN the previous chapter we said that the position of money in the general economic organism rests on its being a medium of economic intercourse between individuals. This also defines the cardinal function of money. Assuming that this cardinal function has been correctly established, it should be possible to derive the other functions from it, and to place them in their correct relation to money.

But we must first analyse the phenomena included in the generic term "economic intercourse." We must specify the objects of such intercourse—both concrete and abstract—in regard to which interpersonal transfers take place; and we must study the processes of intercourse—that is, the various types of transfers.

In so far as the objects are concerned these may be divided into the following main groups:—

1. Material objects, the ownership of which, with the consequent full and exclusive right of disposition over them, is transferable.

2. Utilities transferable without simultaneous transfer of ownership of the objects used. In such cases a restricted right of disposal is transferred from the original and permanent owner. Such a transfer is only possible in connection with things which are not consumed or destroyed by the intended use, but remain more or less unchanged in substance. Transfers effected by leasing, renting, or lending for use fall into this class.

3. Services not incorporated in commodities, rendered by undertakings as well as by individuals. In regard to the services of undertakings we have, for example, the transport of goods and passengers. These services, which appear to be related to, or even coincident with, the utilities mentioned under para. 2 above, must be differentiated from such utilities. It is an entirely different thing to hire a car or a ship for the transport of my goods, than to instruct the owner of the car or ship to undertake the transport for me. In the case of personal services of all kinds we are concerned with the transfer of a right, restricted, both in time and objective, over human beings as possessors of definite forces and capabilities. The possibility of transferring such a right of disposal over persons must necessarily be limited under social and legal institutions such as ours, which do not recognise slavery or the ownership of human beings. In this case we are dealing with the transfer of personal utilities. These

personal utilities fall into two groups, namely, those which include all the more or less specifically limited services of a person within a specified time, by which the use of the forces and capabilities of the person is transferred to another, who can dispose of them both in manner and direction of application (as, for example, in the case of menials, workmen, labourers, officials); and those which imply a definite single service both in kind and extent (such as in the case of the delivery of a message by a messenger, services rendered by a medical man, by a lawyer, by a musician, etc.).

4. The last important group of objects of economic intercourse is represented by claims, chiefly referring to goods, but also to utilities and services. The purpose of these is fulfilled at a definite future point of time by the transfer of the commodities agreed in advance, or by the performance of the utilities or services similarly agreed upon. Such claims falling due in the future can, especially when they are embodied in documents, be equally transferred at the present time,—just like the goods, etc., in terms of which they are expressed,—and they do not, in the world of economic intercourse, play the least important part.

These four groups comprise in essence all objects of economic intercourse. There remains for consideration the question of the processes and movements to which these objects are subject.

¶ 2. Processes of Economic Intercourse

If we take it that the nature of economic intercourse is to be found in interpersonal transfers, we have in this conception a fundamental basis of differentiation between the various processes of economic intercourse, a basis which has already been commented upon in the historical part of this work. The interpersonal transfer can be either unilateral or bilateral.

A unilateral transfer is one involving either no special reciprocal service, or even no reciprocal performance whatever, and presupposes only an object of economic intercourse given by one person and received by another. Under this heading are grouped gifts, endowments, testamentary bequests, dowries, and other voluntary transfers of wealth. We also have fines imposed by courts of justice, and similar obligatory payments of damages. Finally, there are services which the temporal or spiritual powers require to be rendered to them, such as dues paid to landlords, communities, the State, and the Church. It is true that in the cases just mentioned a certain amount of counter-service is implied, in so far as the ground landlord has to undertake obligations towards his tenants: and some of the activities of the community, State, and Church are to the advantage of every individual

who pays dues and taxes. But there is no question here of a specific return, and no definite balancing of the values of the service and of the counter-service by the parties concerned; nor is there any question of the exercise of free will by one of the two parties. The dues, taxes, etc., are imposed on individuals by the authorities in a one-sided compulsory manner, and individuals cannot escape from submission to these demands by voluntarily depriving themselves of the protection of the law, etc. Thus, as regards the services and dues imposed by the ruling powers, we have, notwithstanding their relation to the activities of the authorities, a case of unilateral transfers.

In regard to bilateral or compensated transfers, we are dealing not only with two persons, but also with two objects of economic intercourse. Each of the two objects represents the compensation for the other, and their transfer between the two persons concerned takes place by way of interchange, so that each of the two persons is at the same time a giver and a receiver.

Within this category of bilateral transfers there is one important line of demarcation, namely, between transfers in which services and counter-services take place simultaneously, and those in which services and counter-services do not coincide in point of time, but the counter-service is arranged to take place at some future point of time.

The first of these cases is so simple as to require no further elaboration.

As to the second type of case, the following remarks have to be made:—

A separation in point of time of performance and counter-performance is an unavoidable necessity in all those cases in which performance takes place at one point of time (as, for example, in the case of the transfer of an article), whilst the counter-performance must, according to its nature, extend over a longer period of time (as, for example, the various utilities obtainable from objects and personal services). In contracts of rent or hire, or in contracts for work, where the act on the one side consists *e.g.* in money, the transfer of money must take place either in advance, before the service or work has been completed, or the service or work must be completed before the corresponding money transfer takes place.

We have, however, another type of transfer in which the act and counter-act are separated in point of time, which must be distinguished from transfers of goods in return for utilities and services.

The transfer of ownership in an article may take place in the present, whilst the counter-transfer of another article may take place at some future point of time. Here the separation in point

of time of act and counter-act is not necessitated by the nature of things, but is caused of set intention.

All the processes which come under consideration in this group have one thing in common with the transfer of utilities—the use of articles is placed at the disposal of a third party for a definite period.

The transfer of only the use of a commodity, whilst its actual ownership is not transferred, is possible only in the case of objects which are not destroyed by use, but can ultimately be returned to their owner practically in their original condition. Should the commodity be one in which use and consumption are synonymous, then any such transfer can be effected only in conjunction with a transfer of ownership, and there can be no question of the ultimate return thereof to its owner. In lieu of the return of the self-same article, one of two lines of procedure can be adopted if the commodity is of a generic type, such as corn or money. Either an agreed quantity of goods of the same kind can be returned, or goods of any other kind corresponding in value can be returned, according to agreement. If the commodity is not of a generic type, only the second line of procedure can be followed.

The most important cases which have to be considered in this connection for an economic society using money are as follows:—

1. The transfer of ownership in a commodity not representing money—such as wheat or cotton, or a machine—in return for a future payment in money (Sale on Credit).

2. The transfer of ownership of a sum of money in return for payment of a sum of money at some future date (Loan).

In the cases under consideration, we have in the present the process of transfer of a commodity against delivery of a claim or undertaking, and in the future a second process which takes the form of a fulfilment of such claim or undertaking. The forms which claims falling due at some future point of time can take in connection with bilateral transfers are very numerous. The cases quoted represent only the simplest examples. Agreed interest payments, due at specified periods, in connection with long-term loans are just as much the result of a claim as the repayment of the capital sum itself. It is the same with long-term contracts involving leases, hire, loans, and personal services in which the money counterpart is not paid immediately, but is paid at regular future intervals in the form of rent or interest. Similarly with purchases of annuities, where, by the payment of a single sum of money or of a number of annual amounts, the purchaser obtains the right to definite annual payments commencing at some future point of time.

Insurance benefits are also of this nature. The payment of annual premiums in the case of fire, accident, and life insurances

creates a right to claims, which, however, fall due only if and when certain contemplated occurrences take place, such as damage by fire, accident, or in the event of death. Further, claims can be procured not only in return for goods, utilities, and services, but also against other rights. In so far as these latter are concerned, we have not only the many kinds of claims to money against money—as, for example, cheques against bills of exchange, or Government loan script,—but also cases in which money claims arise from, or give rise to claims on, other goods of economic intercourse. To this class belong all contracts for delivery and all dealings in futures, whether in regard to goods or securities. For example, in the case of such dealings in wheat, A., say, undertakes to deliver wheat to B., who, on his part, undertakes to pay a specified price upon delivery of the wheat. We have here a bilateral transfer of goods, the terms of which are arranged in the present but are fulfillable in the future, giving rise thereby to two reciprocal undertakings, and consequently to two claims, each of which is conditioned by the other.

We have seen, therefore, that claims to be met at a given future date can arise from a certain kind of bilateral transfer; but such claims can also arise from unilateral transfers. A. can transfer to B. a right to claim from him without any compensating consideration, just as he can in this way transfer the article itself to which the claim relates. The claim must, therefore, be met at the specified future date in the same way as if it had arisen by way of a compensated transfer or consideration.

It follows, therefore, that we cannot regard the maturing of a claim simply as a final act of a bilateral transfer in which the counter-transfer is deferred.

In point of fact, a claim involves a peculiar process of economic intercourse, which is of special importance in the development and functioning of money.

The bilateral transfer of any kind of objects of economic intercourse results usually from the decision of two parties, each of whom acts in the exercise of his free will and is guided by his needs, interests, and the capabilities of the moment.¹ The claim, however, even though it may have arisen from a voluntary transfer in the past, becomes, as soon as it matures, something independent of the will of the person against whom it is directed.

¹ The State control set up during the War created exceptions to this rule. The State even created compulsory bilateral transfers, in particular in the form of deliveries of agricultural products at fixed prices, a system which persists in Germany to this day (1923) in the so-called "Getreide Umlage" (wheat delivery). The rent restriction, etc., regulations which are also still in force, are another case in point. Furthermore, all goods, articles of use, and securities requisitioned during the War and paid for, belong to this category.

By no action on his part can the latter affect any change in the transfer, either as to the time at which it is to be made or as to its contents, and the case is thus allied to cases of compulsory services and dues imposed by Government.

On the other hand, transfers which take place as acts of simultaneous exchange are hardly subject to the influence of Government legislation, although such legislation may influence the content of, and the conditions under which, claims are fulfilled.

Here also there is a relationship with unilateral economic acts imposed by the State.

The performance deferred to a point of time in the future in a case of unilateral transfers, and the similarly deferred counter-performance in the case of bilateral transfers, gain on this account a special degree of importance, which justifies the fulfilment of claims and undertakings being regarded as a special process of economic intercourse.

This investigation leads to the following division of the processes of economic intercourse effected by the intervention of money:—

1. Unilateral transfers:—
 - (a) Voluntary.
 - (b) Compulsory.
2. Bilateral transfers:—
 - (a) Simultaneous transfers of goods against goods.
 - (b) The transfer of goods against utilities and personal services.
 - (c) The transfer of goods against already existing claims.
 - (d) The transfer of goods against claims which are called into being by this act of transfer.
3. The performance of undertakings or obligations resulting from unilateral or bilateral transfers.

¶ 3. Exchange, Payment, and Transfers of Capital

In the study, in the previous paragraph, of the processes of economic intercourse we were concerned simply with dividing into a few main groups, having regard to their essential distinguishing characteristics, the various transfers which take place in interpersonal economic intercourse. As we had to deal with conceptions and not with designations, and as the conceptions had first to be defined before decisions could be made regarding terminology, we refrained as far as possible from using any descriptive terms in regard to the meaning of which there is no general agreement.

The economic processes in which money intervenes are generally divided into those of "exchange" and those of "payment." The

former are transformed by the intervention of money into "buying" and "selling." It is just in regard to these terms that complete agreement of views does not exist. For that reason we have so far, at times, made use of the inconvenient phrase "bilateral transfer" where we might have easily said "exchange," and "unilateral transfer" where we might have spoken of "payment."

Among the individual functions of money, those of acting as a general medium of exchange and as a general medium of payment are the most emphasised by writers. It appears, therefore, advisable, before launching upon a consideration of these individual functions, to obtain a clear idea of the conceptions of exchange and payment.

In everyday language, every transfer of a sum of money is regarded as a payment. In the German language the word for payment, *Zahlung*, originally meant the counting of a number of pieces of money. (Cf. the Latin *numeratio* and the English "toll" or "tell.") Thus, in the general sense of the word, in every exchange for money we have a case of a payment. Whoever gives up goods in exchange for money, in order to procure with that money other goods of which he stands in need, receives and makes a payment. He receives payment as the seller of the goods of which he was the original owner, and he makes payment as a purchaser of the goods of which he stands in need. In this sense, therefore, the act of payment appears as part of the act of exchange brought about by the intervention of money.

That payment in the general sense of the word is more than the one side of an act of exchange effected by the intervention of money is clearly shown by the fact that a large number of payments are made without any question of an exchange arising in connection with them. Wherever a unilateral transfer of money is effected, we have a payment but no exchange.

But a narrower conception of payment has been formed within the wider conception that includes all transfers which take place in money. This narrower conception does not include the act of transfer of money in the case of an exchange, and by means of it a distinction has been drawn between the function of money as a medium of exchange and its function as a medium of payment. Every performance or transaction involving money which is not derived from an act of exchange, constitutes a payment in the narrower sense of the word.¹

¹ Specific acts of performance not derivable from acts of exchange existed, and had perforce to exist just as did exchange or barter, even before the evolution and employment of money. We lack, however, a comprehensive word for these acts of performance *in natura*, one that would be related to the word payment, employed in a money-using economy, as the word exchange is to buying and selling.

It is but a step from this negative definition of the conception of payment in the narrower sense, a definition which in any case necessitates the prior determination of the conception of "exchange," to a conception of the word payment in its narrower sense as that of one-sided transfers (in so far as these are in money). But such a conception would, on the one hand, bring us into conflict with the use of the word in ordinary language, and, on the other hand, it would not be by any means satisfactory in regard to the special position occupied amongst the processes of economic intercourse by acts through which claims are satisfied.

In regard to bilateral transfers of goods which take place simultaneously (case 2 (a) of the classification above), there can be no objection to the use of the term exchange; and if one of the transfers is effected in money, to the use of the terms sale and purchase. This is also true in regard to contracts involving a bilateral transfer of goods at some date in the future, to contracts requiring delivery, and to dealings in futures—in all of which cases we speak of sale and purchase on future account.

The case is different, however, as soon as utilities and personal services enter into a bilateral transfer (case 2 (b)). If the contract involves the right to use a piece of land, a building, or an article of clothing for a specified period in return for money; if, again, a labourer in return for money wages places himself at the service of an *entrepreneur*, or if a transport company in return for an agreed sum of money transports goods for a third person, then we do not in any of these cases speak of exchange or of purchase and sale of utilities and personal services. In these cases we speak of a contract of rent or hire, or a contract for work or service, and we do so not only colloquially, but also in the terminology of economics and in that of law. Still, these economic transactions are so clearly related to those of exchange of goods that in a derivative sense the expression sale or purchase of utilities is used in connection with them. Even Gaius (*L. Z. Dig.*, xix. 2) says: "Leasing and renting are closely allied to sale and purchase and are subject to the same rules of law. Just as an act of purchase is brought about by the stipulation of a price (*pretium*), so is an act of leasing or renting effected by an agreement to pay a rent (*merces*). It is even often quite doubtful whether a particular case is one of purchase, leasing, or renting."

The use of the terms sale and purchase in regard to the transfer of claims involving a consideration is unobjectionable, at least in so far as these claims are embodied in deeds and documents which, like goods, can pass from hand to hand. We speak of buying and selling Government loans, bonds, letters of assign-

ment, mortgages, bills of exchange, etc., but only relatively to transfers of already existing claims (case 2 (c)), and not in regard to the creation and settlement of such claims (case 2 (d) and case 3).

This last point will be seen clearly if we consider economic transactions in which, by arrangement, an act in the present has its counterpart in an act in the future. Here, too, we shall consider only the two simplest cases—the sale on credit and the loan.

If an economic object other than money, is given up in consideration of a future delivery of a sum of money, we can regard this as an exchange of that particular object for a money claim. It is customary to speak of this procedure as being one of buying and selling. It is, however, more to the point to split the transaction up into an ordinary act of sale and a loan. The wheat or the cotton is sold for a specified sum of money. If, now, this sum of money is not immediately transferred into the hands of the seller, but is left with the buyer for a definite period, then the resulting relation between the two parties concerned is exactly as if A. had transferred to B., not the goods which represent the value of the sum of money, but the sum of money itself in return for an undertaking to return it ultimately.

But what is the position in regard to the loan itself?

It has been said that a loan is “really an exchange of present against future goods” (*v.* Böhm-Bawerk). But this view has been objected to on the ground that acts of exchange can be spoken of only in the sense of the transfer and receipt of goods of *different kinds*. There can, however, be no question of a difference in kind between two sums of money—the one given now and the other later (Knies).

In point of fact, the normal act of simultaneous exchange is only conceivable if goods of different kinds are given and received, for the difference in the objects in question on the one hand, and the difference in the requirements of the persons concerned on the other, are the only reasons for such an act of exchange. If, then, in the case of a loan, the future act of return takes, by agreement, the form most convenient and practical for both parties—*i.e.* the same type of goods—it is clear that the very separation, in point of time, of act and counter-act renders the nature and economic meaning of the transactions quite different from acts of exchange.

The force of the objection indicated might be minimised if we regarded the loan as the giving of money in return for a claim. We then have a difference in the type of objects concerned (money and a claim to money). Nevertheless, custom is against the designation of a loan as an act of exchange—that is, as a case of sale and purchase of a claim. No objection is raised to speaking

of a sale of claims, *e.g.* of drafts, bills, and mortgages, when these claims are of prior existence; but to call an economic act by which a non-existent claim is produced an act of purchase and sale would not be in any way appropriate.

We get into even stronger conflict with common usage if we attempt to establish as a derivative act of exchange the second type of economic process involving the element of the future, that is a credit transaction—whether a sale on credit or a loan—which implies the fulfilment of a voluntary undertaking or obligation (case 3). One could, if necessary, place in juxtaposition the two acts—the giving of the sum of money stipulated by the claim, and the giving in return of the claim itself. One could thus construct artificially an act of exchange of a claim for a commodity, or, as the commodity in such cases is money, an act of repurchase of a claim. We do, in fact, speak sometimes of repurchases of claims, but only when the person liable under the terms of the claim recovers it before it falls due—that is, if it is a question of a voluntary act and no element of compulsion is introduced by the subject-matter of the claim. On the other hand, none would describe as an act of bilateral transfer, in which the person liable to pay buys the claim, any such act as the calling-in of a bill of exchange which has fallen due, the calling-in of a bank note which is due for payment at any time, the paying out of a deposit, or the payment of interest which has become due. The element of compulsion sharply differentiates all such acts from those based upon voluntary agreement between two parties, which are generally designated as acts of exchange or of buying and selling. As against this, however, the term “payment,” in the most pregnant sense of the word, is used in connection with the fulfilment of obligations, in so far as these relate to money, or in so far as the final fulfilment of obligations not originally in terms of money takes place through money. The term “payment” in the narrowest sense of the word, especially in its legal meaning, is, therefore, synonymous with fulfilment (*solutio*) of obligations.

Thus, under the above classification, the following cases may be termed acts of exchange:—

2. (a) The bilateral simultaneous transfer of goods against goods.
2. (b) The transfer of goods in return for utilities and services.
2. (c) The transfer of goods in return for already existing claims.

We should have to include within the meaning of the term payment all other processes of economic intercourse taking place by the intervention of money.

If, however, we regard the term "payment" in the narrowest sense indicated above—that is, the fulfilment of claims and obligations in money,—then only the following cases could be characterised as payments:—

1. (*b*) Compulsorily imposed unilateral transfers.
3. Fulfilment of obligations or claims originating in bilateral transfers.

The following cases would not fall within the meaning of acts of exchange or acts of payment (in the narrow sense of the word):—

1. (*a*) Voluntary unilateral transfers.
2. (*d*) The transfer of goods against claims which are called into being by this act.

The most important special case of 2 (*d*) is the loan. The sale for credit we have analysed into a simultaneous act of sale and loan.

The cases 1 (*a*) and 2 (*d*), which represent neither acts of exchange nor yet acts of payment (in the narrowest sense of the word), are described as "transfers of capital," which will be considered later.

CHAPTER III

THE VARIOUS FUNCTIONS OF MONEY

¶ I. Enumeration of the Functions of Money

THE analysis of the processes of economic intercourse gives a natural transition from the determination of the basic function of money to a study of all its other functions. These must be either constituents of the basic function into which it can be split up (just as in the previous chapter the general complex of interpersonal economic intercourse was split up into separate processes), or they must be derivatives of it, or, again, functions which stand in an incidental or accidental relation to the basic function.

Treatises and textbooks on money enumerate for the most part the following functions:—

- (a) As a general medium of exchange.
- (b) As a general medium of payment.
- (c) As a general measure of value.
- (d) As a carrier of value through time and space (store of value).

Some add to this list as a separate function that of a medium of capital transactions.

A retrospect of the historical evolution of money throws into the sharpest relief the function of a general medium of exchange. We have seen that the primary cause of the creation of money was the necessity of overcoming the great difficulties of direct exchange or barter, difficulties which grew progressively as the exchangeable commodities increased in number. Historically, therefore, to act as a general medium of exchange appears to be the primary function of money. Even in our modern economic system this function stands out to such an extent that it is often regarded not only as the most essential, but even as the only essential one, compared with which the other functions are merely derivative or incidental. Menger, in particular, holds this view. He writes:

“The original conception of money, a conception which appears in all stages of its development, is that of a general and universal medium of exchange. All definitions of money, which ascribe to it as its essential characteristics, *as such*, the functions observed in the monetary systems of civilised countries, and which are, in fact, merely summaries of the general functions possessed by the money of modern economic societies (even of such functions as are derived from its being a medium of exchange), must accordingly be rejected as erroneous and in general as historically incorrect. If the derivative functions of money, and

the other ways in which it is commonly used, are, on account of their great practical importance, to be considered as part and parcel of the definition of money, then they should be embodied in such definitions only in a manner which does not disguise their derivative, incidental, or accidental nature. 'Money' is every object of economic intercourse which functions as a generally accepted medium of exchange, and is accordingly, as a rule, also a standard of value in exchange transactions. These are functions with which we find normally combined those of acting as a medium of unilateral and subsidiary transfers of wealth, as a medium for capital transactions (if the substance of the money is suitable for this purpose), and as a medium of a store of value."

Menger is right in so far as he rejects all attempts to define the concept of money as an enumeration of all the various functions which money fulfils or can fulfil. But his theory, which regards the function of a medium of exchange as the only essential function of money, does not hold water when tested by the above analysis of the processes of economic intercourse.

Of the economic processes made possible by the intervention of money, those which may be designated as acts of exchange form only one special group. The function of money as a medium of exchange can, therefore, be but a part of the basic function of money, which is that of an instrument of interpersonal economic intercourse. It can only be a sub-function jointly with other sub-functions. The processes of economic intercourse which cannot be regarded as acts of exchange have, so far as they are brought about by the intervention of money, been characterised above as acts of payment and transfers of capital.

From this it follows that the function of money as a medium of payment, and its function as a medium of transfer of capital, must be regarded as constituent functions co-ordinated with the function of acting as a medium of exchange. In each of these constituent functions money operates as an instrument of interpersonal economic intercourse. On the other hand, the basic function of money within the economic organism is fully covered by the three constituent functions referred to.

Outside it, therefore, there remain of the functions which are usually enumerated as separate functions of money those of acting as the measure of value and as a carrier of value through space and time. The relation between these two separate functions and the basic function can be determined only by a special study of their nature. We shall for the present leave this question open, and we propose to turn to a closer study of the individual constituent functions.

¶ 2. The Function of Money as a General Medium of Exchange.

We must again emphasise the fact that in the case of an act of exchange we are dealing with a bilateral and simultaneous transfer of wealth in which one value is given in return for another, but which represents a transaction complete in itself, because the aim has been reached as soon as two economic objects have been exchanged.

The self-contained act of exchange, however, by the intervention of money becomes dissociated into two separate and relatively independent acts, an act of purchase and an act of sale. If in an act of exchange, for instance, a pair of shoes is given in direct exchange for bread, then, by the intervention of money, the shoes are at first given in exchange for money, and the money is then given in exchange for bread.

The enormous economic advantages derived from this seeming complication of a simple process have already been explained in the historical part of this book. It only remains to give here a short recapitulation and a systematic summary.

The advantages of a general medium of exchange consist in overcoming the handicaps which present themselves in ordinary normal exchange—that is, in barter. These are in the main as follows:—

1. It is unusual for two persons to meet, each of whom is willing to exchange just that particular commodity which the other desires to obtain, *e.g.* a smith who needs bread meeting a baker who needs horseshoes.

2. Still more unusual is the case in which the commodity which one of the two has to offer is of about the same value as the commodity which he requires. For example, anyone requiring bread, and having only a precious stone to give in exchange, even if he meets a baker ready to exchange bread for his stone, will scarcely require as much bread as will correspond to the value of the stone.

These difficulties must necessarily become greater as division of labour becomes more highly developed, activities of the separate economic individuals and groups more highly specialised, and goods which can be exchanged more numerous and varied. More correctly expressed, we may say that unless and until these difficulties which stand in the way of the exchange of commodities are surmounted, it is not possible to conceive, given the principles of private ownership and of the economic independence of individuals, anything beyond the most rudimentary condition of the processes of production and of division of labour. Methods of production which have been brought to their present fruitful

level by the organised division of labour and consequent technical progress, became capable of intensification only as they were freed from considerations relating to the direct consumption demand of the producing individual, and as these considerations were replaced by those relating to the demand of ever-increasing collections of individuals, a factor which left to the processes of production free play to develop rationally according to their own laws. The direct restriction of production to demand for consumption existed only during the stage in which economic society consisted of isolated economic units, with deficient methods of communication, in which every individual and every small group produced merely what they needed themselves. As against this state of affairs, even the most primitive and direct process of exchange or barter meant a certain freeing of production from the fetters of individual demands. But until a medium of exchange was introduced into economic intercourse, the direction of productive labour was necessarily determined, even though no longer exclusively with reference to the individual's own demand, yet still with reference to the demand of a narrow circle of persons, upon whose production one was directly dependent for the goods needed.

Money, as a general medium of exchange, completely broke these bonds. By splitting up the elemental act of exchange into an act of sale and an act of purchase, and by thus seemingly complicating matters, money simplified and to an extraordinary extent made easy economic intercourse between the various members of an economic society, by making it possible for each economic individual to obtain what he needed from others than those who took his own products. When, in the example quoted above, the blacksmith found himself in want of bread, then, as soon as he had, in money, a general medium of exchange, he was no longer dependent upon the baker both as a producer of bread and as a purchaser of his own horseshoes. On the contrary, he could sell his horseshoes to any person who was in a position to give him in return a quantity of the general medium of exchange corresponding in value to the horseshoes he gave up. The man who desired to give up his precious stone in exchange for other things was no longer under the necessity of taking in exchange for its full value the products, so far in excess of his requirements, of the person who took the stone from him. For the money he received he could in fact obtain a thousand different things from a thousand different persons, and he could further use his money for whatever kinds of payments he desired, or for lending to others.

This far-reaching dissolution of the bonds between individual production and individual demand resulted in the consequent stage in which the processes of production could develop in a practical

manner. In so far as production is concerned, demand is now only of importance in the quite general sense that, where in any economic society things are produced at all, they must be produced to meet some kind of demand; and the extent of this demand becomes the greater, and, with it, the freeing of production from individual conditions of demand the more effective, as the population becomes denser and the conquest of space by improvements in means of transport more complete. Money freed production from the fetters of *individual* demand, just as improvements in the means of transport freed it from dependence on *local* demand. Just as by easier and cheaper transport production was enabled to seek out for each of its many branches of activity the localities in which the most favourable conditions obtained, and in this way increased the productivity of labour to an immeasurable degree, so also money made it possible for production in all its separate branches to be organised without regard to the demand of the participating individuals. Thus the dissolution of the bond between production and individual demand effected by money was a condition precedent to the dissolution of the bond between production and the place of consumption brought about by means of transport.

Money has freed production in two respects. In the first place, the producing individuals and concerns can employ their special forces and capabilities in particular branches of production within the sphere of the general demand of economic society as a whole, without having to take into consideration their own wants or the wants of a definite and limited group of individuals. Whosoever brings into the market any speciality, places himself in the position, so long as the speciality he offers is in any demand, of obtaining money with which he can provide for himself that which he himself needs. Everyone can, therefore, concentrate upon the greatest possible perfection in his own particular product without having to divert his activities to the satisfaction of his own needs. Even for partially manufactured articles, which do not directly serve for the satisfaction of any consumption demand, the possibility exists of their being disposed of in exchange for money, with which the necessities of life can be purchased at any moment. It thus becomes possible for every individual to devote himself to a sectional process within the general scope of production of a particular commodity. Just because money enables the individual to pass from any and every intermediate stage of production direct to his final aim of satisfying his own wants, is it possible to arrange that complex division of the process of production into separate stages, and the division of the separate stages into numerous independent undertakings.

As the specialisation of production is made possible by money, so is also the task of organising it in an economic society based on

private ownership, and on the right of individual self-determination. Money alone renders it possible to co-ordinate the employment of capital and of human labour for a definite productive purpose, the result of which is indivisible. The indivisible products resulting from the combined efforts of capital and labour can be disposed of against money, which itself enables small and large fractions of value to be formed with the utmost exactness, and renders it possible to distribute the reward of capital and labour in accordance with the share of each in the joint product. This possibility alone creates the requisite conditions for that effective organism of the production of commodities which we designate by the word "undertakings."

The expansion and development of the division and combination of labour depend to an essential degree upon the function of money as a medium of exchange. By virtue of this property, money makes possible the co-ordination of all productive forces for the benefit of the whole community in a way which would otherwise be conceivable only in a society organised on absolutely despotic lines. Money makes the processes of exchange so elastic that every individual is endowed with a degree of freedom of action which amounts to nothing less than absolute independence. In proportion as the division of labour develops and becomes more intricate, so everyone becomes more and more dependent upon others, both in buying and selling; but in proportion as the organisation of money develops and becomes more universal, in proportion as it becomes more and more possible to buy and sell all goods against money, so everyone becomes less and less dependent upon a specifically defined circle of others. Such dependence as still remains relates to an unspecified and impersonal entity—a "market." This entity does not control the individual with the strictness and definiteness of personal control. On the contrary, it enables him to take into account considerations of his own personal advantage in making his decisions—and this is regarded as freedom. At the same time the dependence of the individual upon the larger entity, a dependence which is not felt as a lack of freedom, is the most important principle of the organisation of civilised society.

The usefulness of a medium of exchange, having been so far recognised as to lead by force of custom to its general employment, is bound to develop to such an extent that the fact that there is conscious recognition of the economic advantages of the medium is no longer of vital moment. Its universal use is no longer governed by the factor of free choice, but it becomes of itself an absolute necessity for the various members of an economic society organised on the principle of division of labour. The use of certain specified commodities as media of exchange stimulates the demand

for these commodities, and thereby increases the chance of their disposal beyond the limits of ordinary consumption. As everyone is able to procure objects of economic intercourse more easily and to better advantage if for these he can offer quantities of the general medium of exchange, the desire to give products only in return for the general medium of exchange soon becomes universal. Everyone, then, who wishes to obtain goods from others, has first to provide himself with money—that is, to yield up his own products, etc., only in exchange for money.

In the modern economic world this process of evolution has been fully developed, inasmuch as all objects of economic intercourse which are marketed are normally bought and sold only in exchange for money. Thus, money is the pre-requisite for the entire process of exchange. Its general and unrestricted purchasing power in regard to all objects of economic intercourse gives it the power of abstract untrammelled and unrestricted wealth. "*Pecuniam habens omnem rem quam vult habere.*" Whilst all other economic goods must, if they are to be used for obtaining other goods, be first exchanged for the one object of intercourse, money, money itself is free from any such restriction or from specific ends of use or consumption, and its employment for the purpose of procuring other objects of economic intercourse is as unlimited as the world of intercourse itself.

The events of the last few years have taught us, however, that in this evolution of money set-backs may occur.

The War offered an example of such a set-back. It created, all over the world, a tremendous hunger for commodities, more especially for munitions of war and for the necessities of life. It also produced an enormous inflation in the circulating currency which took the form of paper money issues in belligerent countries and an influx of gold from the belligerent into neutral countries.

The scramble for certain commodities which ensued, led not only to tremendous rises in prices, but also to the temporary negation of the dictum, "*Pecuniam habens omnem rem quam vult habere.*" Things went so far that, both in international and home trade, certain commodities could only be obtained by reverting to the principle of barter.¹

During the post-war period the process of return to barter continued, and was intensified in those countries whose monetary system underwent further disorganisation. This was due to the fact that in such countries, amongst which Germany must be included, money lost one of the properties necessary for a good medium of exchange, namely, "stability of value." A currency the purchasing power of which is subject to continual and apparently endless diminution, must ultimately become useless as a

¹ See the author's *Weltkrieg*, vol. ii, p. 202 *et seq.*

medium of exchange. If the State makes use of its power compulsorily to impose such money upon trade, or makes it impossible for trade to use other media of exchange (as, for example, foreign currency), trade is gradually forced back into forms of natural exchange or barter.

¶ 3. The Function of Money as a general Medium of Payment

When considering the processes of economic intercourse, we saw that ordinary exchange or barter was but a special type of transfer, in its essence a twofold simultaneous transfer. Allied to such exchanges are those processes which, as soon as money makes its appearance, we designate as "payments" in the narrower meaning of the word. Money functions as a medium of payment as soon as it becomes the means of fulfilling obligations, both compulsorily imposed and voluntarily contracted. We may note that money may also be the means of fulfilment of exchange contracts which, though expressed in terms other than money, cannot, for one reason or another, be fulfilled by the parties liable in the terms originally agreed.

This last manner of using money has frequently—especially from the legal point of view—been regarded as constituting a separate function of money, one, moreover, that is of primary importance to the conception of money. Money has, therefore, been described as a medium of final compulsory liquidation, or as a medium of final tender.

The function of money as a general medium of payment is thus a constituent of its basic function as an instrument of interpersonal intercourse, and in this respect is allied to its function of a general medium of exchange. There is, therefore, a close connection between the function of money as a medium of payment and as a medium of exchange. But the nature of this connection is less simple than it would at first sight appear.

Take one aspect of the connection. The existence of money as a medium of exchange is conditioned by its general employment as a medium of payment. Wherever money acts as an object of economic intercourse by means of which all other objects can most conveniently and most cheaply be procured, and can most easily be turned over, there unilateral transfers of wealth, both voluntary and compulsorily imposed, are usually best carried out by money, especially in cases in which the donor, whether of free will or compulsion, is unable to supply from his own possessions exactly those particular objects which are required by the recipient. If the donor is not in a position to do this, and if the transfer must nevertheless take place *in*

natura, the recipient would either find it necessary to procure the objects of his immediate needs by exchange for the commodities he has actually obtained, or the donor would himself have to effect such an exchange before the transfer took place. Transfer in the form of that economic object which is the general medium of exchange, and which as such is obtainable by everyone and can be used without restriction for procuring any other kind of economic object, presents the necessary compromise between the interests of the two parties.

In the case of transfers which are essentially voluntary, such as gifts, legacies, dowries, foundations, etc., performance *in natura* is still of relatively common occurrence, because the donor cannot be expected to put himself to the inconvenience of actually having to exchange the objects which he possesses. At most, a donor might do so in a case where the gift is subject to some obligation imposed by custom, such as, for instance, in the case of a dowry.

Where, however, taxation of wealth is imposed compulsorily, the powers exercising such compulsion may, in all cases in which performance *in natura* does not meet their needs (as it does, for instance, in the case of requisitions in war-time, billeting during manœuvres, and the German wheat dues in post-war years), require performance in money. If these compulsory acts of performance are, by verdict of the courts, to be transferred to third parties—as in the case of compensation for material destruction, or damages for injuries, insults, etc.; or, again, where an obligation not in terms of money cannot be fulfilled in the form originally incurred, and another kind of performance is legally substituted therefor; or yet, again, if it is a question of the imposition of fines and penalties for trespass upon the rights of others—in all such cases the unilateral act must be performed by some specific person, unlike the case of barter in which everyone is free to select at will the other contracting party. Furthermore, in such cases the performance cannot be made to depend upon agreement as to its nature, but is absolutely obligatory, whilst in the case of barter, performance does not take place in the event of there being no agreement. The law finds it necessary, therefore, to prescribe the conditions in regard to the manner of the performance.

In the case of compensation, fines, and the like, it is obvious that such compensations must be contributions in the form of general wealth which cannot, in general, be replaced by any object of specific utility. It follows, therefore, that such obligations must be discharged by some object of economic intercourse which, as a medium of exchange, is devoid of any specific utility, represents merely an abstract purchasing power, and is, at the same time, easily procurable and readily utilisable for economic purposes.

For this reason, compulsory payments to public authorities are almost exclusively made in money. Money here dissolves the onerous link between the provision of the means required for Government activities and those activities themselves, just as by its intervention in exchange business it effectively provides the link between wholesale production and individual demand. If payments to the State, the community, etc., are made in terms of money, these authorities are provided with the purchasing power which they require for the purpose of fulfilling the tasks which devolve upon them. The distribution or incidence of taxation as regards separate individuals can only be rendered independent of the particular goods and services required by the State if such burdens are levied in terms of money. By this means the processes of obtaining State supplies are developed and made infinitely more effective, for the State is thereby able to draw even upon individuals for whose products or special services it has no use, or practically no use. Furthermore, as far as the community itself is concerned, this separation of the question of obtaining supply from that of the actual employment of the supply, makes it possible to distribute the incidence of communal charges in accordance with the general capacity to pay of the persons charged, and independently of the concrete form of their possessions or of their economic activities.

Lastly, the fact that ordinary legal claims affecting wealth—such as claims to interest and dividends, claims for the return of transferred property-values, etc.—are preferably fixed in terms of money, is derived from the function of money as a medium of exchange. For the claimant, no other economic object carries a guarantee of equal use to him when the claim falls due than that provided by money for which all other objects can be exchanged. In his turn the person liable to any claim finds that no other economic object offers similar security in regard to the fulfilment of his obligation, or similar freedom for his activities directed to that end. Even where it was formerly customary to express obligations in terms of objects accruing from undertakings, etc.—as, for example, a share of the harvest as the rent payable for a piece of land,—the interests of the claimant not only irresistibly dictated that the liability should be changed into one of money, but also the person liable as a rule found such a change a relief. In particular, the change gave increased freedom to his personal and economic activity. It is the unhealthy condition of the monetary system in Germany brought about by the War, the Revolution, and the Treaty of Peace that has caused a certain degree of retrograde development in this sphere (*e.g.* fixing rents in terms of rye instead of in gold, etc.).

In short, there is a clear and far-reaching dependence of the function of money as a medium of payment upon its function as a medium of exchange. Upon the recognition of this connection rests the conception explained above, according to which the function as a medium of exchange is, in theory, the only essential function of the conception of money from which the function as a medium of payment is merely a derivative.

The relation between the two functions, that is, their dependence one upon the other, is reciprocal, not only historically but also theoretically. The function of money as a medium of payment has had an influence on its employment as a general medium of exchange, just as its function as a medium of exchange has had an influence on its employment as a medium of payment ; and it is especially in modern monetary institutions that its employment as a medium of exchange is exceptionally conditioned by its qualification to rank as a general, and particularly as a legal, medium of payment.

Certain unilateral transfers of wealth, especially dues payable to public authorities, monetary fines and compensations, were early found to require regulation. In the historical part of this book attention was drawn to the fact that the regulations regarding these unilateral transfers had a vital influence upon the transformations of certain commodities into money. The close connection, shown over and over again, between *bloodgelt* and money is a clear indication of this. We may, of course, say that it was only natural that such objects as were already in general use as media of exchange should be fixed upon preferably as the forms in which these compulsory payments should be made. But the fact remains that the use of certain commodities for facilitating exchanges and their use also in unilateral transfers of wealth set up a reciprocal influence. Just as it is correct to say that certain exchangeable commodities were taken in discharge of these one-sided payments, because by their function as generally accepted media of exchange they offered the surest means of obtaining other commodities, so it is equally correct to assert that because one or other commodity was prescribed in connection with certain of these one-sided transfers, such commodity was thereby rendered especially adapted for the performance of the function of a medium of exchange. It did not require much persuasion to accept such a commodity in exchange for others, because in the last resort it could be used for making payments to the State, the community, etc. Furthermore, both functions of money here under discussion are derived from the same underlying psychological motive. Properties which, in the earliest stages of economic intercourse, predestined certain commodities to become media of exchange, necessarily made these commodities appear—and this probably

even *before* economic exchanges arose—especially suitable for these unilateral acts of transfer. If the earliest forms of exchange arose from the fact that certain commodities were already regarded as objects of universal desire and of enhanced prestige for those who owned them, it is quite natural that chiefs and priests, when fixing the tributes to be paid to them, should direct their attention above all to such objects, even before these had acquired that further degree of importance subsequently imparted to them by the possibility of their employment as a medium of exchange—an importance which was ultimately to secure their domination over all other objects of economic intercourse.

With the development of State organisation and activity, the use of certain special objects for unilateral transfers increased the significance of money; and as the law developed, and with it credit transactions based on the security of the law, the function of money became an important means of liquidating liabilities. Consequently, in our present-day economic institutions the provisions in regard to unilateral and compulsory transfers, especially to the State, as well as the legal provisions for the performance of private contractual obligations expressed in money, are of the greatest influence upon the use of specific media of exchange. In considering the evolution of money, it may be a little doubtful whether money did not promote its own function as a general medium of exchange, and thus have become the instrument both of unilateral transfers and of compulsory exactions. Nevertheless, in modern economic institutions there is no doubt that in some States money itself, and in others certain kinds of money, only function as exchange media, and only rank as money at all, because compulsory unilateral transfers or monetary exactions can, or must, be implemented in those particular forms of specie. Obviously this is so in the case of paper currencies, for since paper notes, which in substance are quite valueless, are accepted in exchange for other objects of economic intercourse, it is only because legislation has given them the power of discharging money debts; because they can or must be used for payments to the State; and, finally, because legal decisions, in so far as they are expressed in terms of money, recognise or establish these notes as money. Anyone with a claim enforceable by law must submit to the conditions which the law lays down in regard to the contents and circumstances of the discharge of his claim. He is not in a position to refuse to accept performance in paper currency if the State has made that paper currency legal tender. On the other hand, where ordinary acts of exchange or sale are concerned, every individual may insist, when arranging the nature of the article he is to receive in exchange, or when discussing the purchase price,

that he should be paid in full legal tender metallic currency, or, if such be unavailable, in foreign money.¹ If, nevertheless, a seller is just as prepared to accept payment in paper notes, this is exclusively due to the fact that such notes are "legal tender." It is quite clear that here the function of money as a medium of exchange is based upon its function as a medium of payment.

The supposition, then, that the medium of payment function is a derivative of the function of money as a general medium of exchange must be rejected. Both functions are mutually interdependent and stand on an equality. Both are in an equal degree constituent parts of the cardinal function of money as a medium of interpersonal economic intercourse.

4. The Function of Money as a Medium of Transfer of Capital

In the case of "capital transactions," as in that of exchanges and payments, we are dealing with transfers of wealth from one person to another. Such a transfer may take place without any pre-arranged conditions in regard to a specific counter-transfer (case 1 (*a*) of the schedule on p. 296 above). More important, however, is the transfer of capital values in accordance with particular stipulations as to the counter-transfers—that is, against claims called into existence only by this very transaction (case 2 (*a'*)). The most important case, as has already been stated above, is that of the loan.

The mere cession to another of the possibility of using an object for a time without transferring the ownership of that object does not fall within the scope of capital transactions, as in this case it is not the capital itself but the use of it which is transferred. When we speak of "capital transactions," capital market, etc., we understand by the word capital not the comprehensive category of existing means of production, but that part of mobile wealth which produces for its owner interest or dividends, and enables him thereby to obtain a share of the aggregate income of the country. The special nature of the economic processes which take the form of transfers of values in the present in return for performance in the future—particularly sales on credit and money loans—has already been mentioned above. Although in these cases an economic commodity—be it money or be it some other object—is given in return for a claim expressed in terms of money,

¹ The exception proves the rule here. The efforts of Governments to prevent their currencies falling into decay and disuse—for instance, by declaring illegal all contracts expressed in terms of foreign currencies—are inspired by the recognition of the fact that, without such exceptional measures, the local currency is doomed to extinction.

these acts must be distinguished from purchase of already existing claims, or from exchange of such claims for others, just as settlements of claims must be distinguished from repurchases of claims which have not yet fallen due. It must, therefore, be borne in mind that the factor of compulsion, which, in the narrower sense, characterises as a payment the settlement of legally accrued claims, is lacking in sales on credit and in money loans.

As to cases in which mobile capital is placed for a time at the disposal of third parties by being lent to them for a consideration (interest), such a transfer takes place, whenever the goods required—whether for consumption or for production—are not themselves given, in the form most practicable for both parties, *i.e.* in the form of money. Even when the transfer takes place in the form of commodities which do not represent money, the counter-transfer which must take place in the future is best fixed in terms of money, so long as the monetary system of the State can meet the requirements made upon it.

The capitalist whose capital does not consist of money, and who does not transpose his possessions into money for lending purposes, can lend his capital only to persons who may need just those forms of capital which he owns. With money, however, the man who receives a loan can procure for himself all that he requires for consumption or for production. The possibility of profitably employing capital which is not in the form of money is thus smaller than the possibility of so employing money capital, just as the exchangeability of some single article of utility is smaller than the purchasing power of money.

Another factor must be added to this unlimited capacity of employing money capital. When capital is transferred *in natura*, and it is agreed that the return should also be *in natura*, a serious difficulty immediately arises. Goods which are consumed or considerably depreciated by use, which are accordingly unsuitable for the purpose of having their mere right of use transferred by way of leasing, renting, or lending, are not unconditionally replaceable by other goods of the same kind, but show even considerable differences in quality amongst themselves. If a horse is hired out, not merely for the duration of a ride, but is transferred to the ownership of another person on condition that it is returned to the original owner ten years later, it is necessary to take into account the fact that horses even of the same breed and the same age may vary enormously in value. Money, however, is the most conveniently uniform object of economic intercourse. Differences of quality within the monetary system of one and the same State cannot arise as long as orderly conditions exist, so that equal sums of money represent the same value, and can be unconditionally substituted for one another irrespective of their particular

denominations. The difficulty of arranging the form in which any repayment should take place in the future is, therefore, overcome in advance as soon as the transfer of capital is made in the form of money. Should the original transfer be *in natura* the difficulty is obviated by arranging the return transfer, not *in natura*, but in an agreed sum of money, representing the price of the commodities transferred. Similar facilities are supplied by the use of money for fixing interest payments for the duration of a loan.

The advantages and facilities introduced into capital transactions by money have had the result, in properly regulated monetary systems, that capital transactions are almost as exclusively effected in money as are ordinary exchanges of goods. The demand for both short- as well as long-term investments is primarily directed towards money, and for this reason those who are not in a position to use their entire cash in their own undertakings find in money the most easy and advantageous form of investment. Moreover, considering the natural handicaps of capital loans *in natura*, it is clear that, without the use of money, the great capital transactions and accumulations of capital, known to the modern world, could not have taken place any more than the great expansion in the exchange of goods and consequently in production.

From this it follows, without any further elaboration, that the function of money under discussion is of paramount importance in economics—an importance which is related to the function as a medium of exchange in the same way as is that of a market for capital (the “money market” in its widest sense) to that of the market for goods.

Every advantage which money offers as a medium of capital transactions becomes, however, as recent developments show, illusory as soon as confidence in the “stability” of the value of money vanishes by reason of some unsettling development in the monetary system. No one then knows what the exact purchasing power of any sum of money, which to-day is quoted as the price for a purchase, or as a loan, will be at the future point of time when the payment for the purchase or the repayment of the loan falls due. The capital market is then, perhaps even more than the goods market and the money market, compelled to turn aside from money and to seek out other commodities as media.

In the matter of the relation between the function as a medium of capital transactions and the other functions of money previously discussed, we must again recognise that the relation is reciprocal. On the one hand, the suitability of money as a medium of capital transactions is largely based on the possibility of employing money as a medium of exchange and as a medium of payment, as a result of which a person accepting a loan

has unlimited scope for its use. On the other hand, the efforts to exchange money for other goods and to arrange unilateral transfers in terms of money are very substantially strengthened by the fact that wealth in the form of money capital can be infinitely more easily and profitably employed than can wealth in any other form. The function of money as a medium of capital transactions stands, as a derivative function of the basic function of money, as an instrument of interpersonal economic intercourse, in the same relation to that basic function as do the functions of media of exchange and payment.

¶ 5. The Function of Money as a Common Denominator of Value

The functions of money so far discussed are derived directly from the position which money holds amongst economic commodities. Money is a medium of interpersonal intercourse inasmuch as it is given and taken in exchange for other economic objects, used to make payments, and is the object of capital transfers. In all these cases money as such enters into economic intercourse. It brings about changes of ownership by itself passing from hand to hand. It is a medium of economic intercourse by becoming itself an object thereof.

The position is, however, quite different when we come to that function which money has been held to perform as a "measure of value" or a "measure of price." The "measuring" of values and prices may, indeed, be regarded as a general and necessary condition of every kind of economic intercourse, at any rate of intercourse consisting in exchange; but in so far as money fulfils this purpose of "measuring," as to the nature of which some further explanation will be required, it does so indirectly. It does not here directly participate as a medium of intercourse, and does not itself enter into it. Its function as a measure of value cannot, therefore, be derived directly from its basic function as a medium of economic intercourse between various economic individuals. It does not form, as do the functions hitherto discussed, a part of the basic function itself. On the contrary, we must first more clearly examine the organic connection by means of which the function of money as a measure of value or price is related to that of a direct medium of economic intercourse.

First, it is necessary to establish what elements are comprised within the function performed by money when acting as a measure of value. This is a somewhat complicated task on account of the different meanings attached to the conception of value, and on account of the endless casuistry introduced into the theory of value by modern economists.

Value is not an organic property of anything, such as are dimensions, colour, hardness, temperature, etc. It rests far more on the relationship of the human being towards the objects of the outer world and is the expression of judgment by the human being on the importance of those outer world objects for him or for human society.

The fact that evaluation takes place has rightly been taken to mean that the existence of value is a primary phenomenon analogous to the existence of the things valued. Thus every definition and deduction of value explains only the conditions which govern, but which do not create value; and every determination of the value of an object implies the necessity of ascribing to another object the value already assumed to exist for some particular object (Simmel). The conditions upon which economic value, which is alone to be considered by us, is based, may be recognised by the fact that, on the one hand, these outer world objects are needed by us, and that, on the other hand, their acquisition entails difficulties which can be overcome only by labour and sacrifice. When these two conditions exist, the objects in question are regarded as being of economic importance and as having economic value.

In so far as the process of valuation takes place in the mind of the individual it is a subjective process, and the position in the value series and the degree of value of each object is a result of this subjective process. Measuring is, however, necessarily an objective process. The dimensions or weight of a body, which are properties independent of our sense of touch, our will, and our judgment, can be measured by a definite process of comparison with some given dimensions or some given weight. That is, we can determine the already existing relation between two given entities of the same kind by an objective process. If, however, the individual values an ox as being worth as much as a given number of copper bars, then this equation of value is not the result of a measurement by the individual of an objective relation between the ox and the copper bars, but is the consequence of a subjective process of valuation. It is not estimated by the valuer, but is created by him. We have here, therefore, not a case of measuring a value, but one of *fixing a value*.

The value of things is lifted outside the subjective sphere by the fact that man does not exist as an isolated phenomenon, but is a single member of a large human society. In view of the prevalent similarity of psychological and material standards, of needs and conditions necessary to life, there are created and developed by usage and education within one and the same social community, certain common views and certain general standards for the formation by separate individuals of

judgments as to value, though these standards have been greatly influenced by the general result obtained from community valuations and variations in the valuations made by different individuals. Each separate member of a community does not create for himself an independent world of values, but there is created a classification of values based on agreement of view and on custom, a classification in which the value appears to be something organically connected with the thing itself and independent of the opinion of individual subjects.

In connection with the taking of value out of the purely subjective sphere, the process of exchange by barter is of particular importance.

In the case of barter the individual is brought into relation with another individual whose valuation of the goods to be exchanged is something objective to him. The exchange itself is an objective fact consisting in the giving and taking of a definite quantity of the one commodity for a definite quantity of the other, the two quantities being assumed to be of the same value.

The condition necessary to bring about such an act of exchange presupposes a minimum of willing agreement between the two participating subjects. The individual subject is no longer autonomous for the establishment of such a connection, as he is in his isolated personal relationship to the things themselves.

In most cases, however, in the determination of such an exchange relation a far larger circle of persons is concerned than the two actually contracting parties. The question of how other members of the same community estimate the value of the things concerned exercises a psychological influence, and at certain stages of economic development the judgment as to value formed by the general community—as we saw in the historical part of this work when considering the beginnings of money—becomes so definite that it results in the formation of fixed traditional ratios of value between individual exchangeable commodities. Such general estimates of value also become embodied in edicts issued by the authorities—*e.g.* in price schedules—and thereby receive definite shape, which exercises a certain external form of compulsion on the judgment of each individual. But apart from these facts, even where legislation and custom leave the widest possible field for the exercise of the subjective judgment of value by the commercial world, yet wherever commerce has developed even moderately, the relation in which the various goods are exchanged for each other is the product of a multiplicity of subjective judgments as to value, and as such is withdrawn from the sphere of the isolated individual and is influenced by him to but a slight degree. The relation of value which exists at any given point of time on a particular market,

when two kinds of commodities are exchanged for one another, is based on the mass factors of supply and demand. As a general rule, no one would give to another person for any article more than any third person would be prepared to accept for that article. Similarly, the person offering an article would not part with it in exchange for a lesser amount of value than some third person would be prepared to give for it. It follows, therefore, that the contracting parties themselves are not the only decisive factors in such an exchange, but all their competitors, both on the side of supply and on that of demand, enter into the question of fixing the ratio of value on the basis of which the act of exchange is ultimately effected.

This ratio of value realised in an actual transaction is in no way identical with the subjective judgments as to value by the parties to the exchange. On the contrary, in any such exchange the subjective judgments of the persons exchanging must invariably differ from each other, and from the value-ratio on the basis of which the exchange is actually effected. It is by no means the intention of the exchanging persons to exchange, one for another, articles which they regard as of equal value. The whole purpose of the exchange is to obtain, in place of an article which one of them possesses, another article upon which he places, by reasons of his general economic position and purpose, a higher value, and an act of exchange is actually brought about only when each person values the quality and quantity of the commodities offered to him higher than the commodities which he has to offer in exchange.

Not only, therefore, does the actual ratio of value arrived at in the act of exchange of two commodities correspond but little to the judgments of the exchanging persons, but it is, on the contrary, a product of the many divergent judgments of all those, the very divergence of whose judgments has actually produced the basis out of which the exchange grew. If ten persons had given up oxen in exchange for sheep on the basis of the ratio $1 \text{ ox} = 8 \text{ sheep}$, then the ratio of value upon which the ten acts of exchange were effected has been established by the fact that at least ten persons who were in possession of oxen valued 8 sheep more than they valued 1 ox, whilst, on the other hand, at least ten persons who owned sheep valued 1 ox at more than 8 sheep. This destroys the connection between the subjective judgment of value of the individual and the ratio of value between separate exchangeable goods as established in dealings. This ratio of value between exchangeable commodities appears as an objective fact in so far as individual economic subjects are concerned, an objective fact which each individual can modify in practice according to the dictates of supply and demand, but from the effect of which not

even the most powerful individual can render himself altogether independent, whilst, in general, he must almost completely subject himself thereto. The importance of the ratio of value on which exchange transactions take place at any time is the greater for each economic individual, the more production for personal use is driven into the background by production for the market. The more completely an economic system becomes organised on a commercial basis with division of labour, so that individuals have to obtain what they require by the roundabout method of exchange, the more is the ultimate result of economic activity, as measured by the degree reached in the satisfaction of needs, dependent upon what anyone can obtain in exchange for his services or for his products.

The objective existence of an exchange relation between two commodities leads to the wrong conclusion that each of the two commodities is endowed with a value independent of the valuation by the separate individuals, a value designated as "commercial value" or "exchange value." The "commercial value," as distinct from the valuation by the individual, is that value which commerce, *i.e.* the impersonal aggregation of those between whom economic relations exist, assigns to the objects valued. This value no longer rests upon any direct relationship of the things to the valuer himself. From this standpoint it is the relation in which the things stand to each other. Similarly, exchange value does not find its measure in any direct relation between the object to be exchanged and the economic subject, but invariably in that object which is accepted as equivalent value in exchange.

Equivalent value given in exchange for an economic object is called the "price." Each of two objects which are exchanged one for the other represents, from the varying standpoint of the two exchanging persons, the price of the other object. Where a monetary system has been fully developed, and all economic objects are controlled by money, in exchange for which they are offered and received, the word "price" is restricted in its meaning solely to the price in money, or at any rate to the equivalent value expressed in money.

Price is, therefore, frequently represented as the expression, the tangible embodiment, of the exchange value of one object in terms of another. "The price of a commodity is the exchange value of that commodity expressed in terms of the quantity of some other definite commodity which has been, or is to be, exchanged for it" (Roscher).

"Exchange value is to price as the mere possibility of a commodity being exchanged for another is to the actual event of exchange" (Wagner).

This apparently illuminating derivation of price from that of exchange value, which is considered inherent in things themselves, completes a circle of errors which has brought much confusion into the theories of value, price, and money, and especially into the conception of money as a measure of value or of price.

We must keep steadfastly before us the fact that the process of valuation of things which takes place in the mind of an individual has, as the sole basis for the conception of "exchange value," its counterpart in the *relation* by which different kinds of economic objects are exchanged for each other. The mere fact that two different commodities, such as gold and iron, are exchanged for each other tells us nothing in regard to value or price, and indeed we are not told anything until we reach the further step, without which the first is inconceivable, namely, that the two commodities are exchanged one for the other in a specified ratio, *e.g.* 1 kg. of gold for 50,000 kg. of iron. In this *ratio*, however, price is already implied. No exchange transaction takes place without price being implied in the very act of exchange. Price is nothing more than one side of the equation which represents the exchange, and it is, just as the act of exchange itself, the direct result of divergent subjective judgments as to value formed by the individuals who represent the supply and demand of commerce. On the other hand, the "exchange value," or "commercial value," ascribed to commodities, is, as has been shown above, only a corollary from the fact that two economic objects are exchanged one for the other in a definite quantitative ratio. As, however, in this ratio the price of each of the two objects is at any time already expressed in terms of the other, it follows that price is not a result of the exchange value, but that it stands to such value in the same relation as the abstract stands to the concrete.

From this we deduce in regard to the function of money as a measure of value or of price the following:—

In order to effect the exchange of two economic objects in general, or the exchange of an economic object for money in particular, no measure of the exchange value of the objects to be exchanged is required. In point of fact, the ancient theory, already upheld by Aristotle, that an exchange transaction requires each of the participating individuals to receive an equivalent value, and that consequently the value of the commodities to be exchanged must be measured before the transaction (a purpose which is fulfilled by money), puts the cart before the horse. Let us consider the act of exchange by itself. We find that it results from the divergence of the estimates of value of two individuals in regard to the relation between the exchangeable commodities—in that each of these individuals values more highly the commodity possessed by the other. No kind of

objective value, which is susceptible of measurement, is as yet a concomitant of these diverging individual judgments of value. Only when the two individuals agree upon a definite ratio of exchange within the limits of their own estimates of value and make the exchange transaction on this basis, does an act result which contains an equation of value and a measure of the commercial value of the one commodity in terms of the other. The exchange ratio is, therefore, not the result of a process of measuring but of an act of agreement, arrived at by the individuals making the exchange, and itself now supplies the basis for a reciprocal measure of the values exchanged. In other words, price is not fixed by measuring exchange values, but it is price which makes the measuring of such values possible.

What is shown in an isolated act of exchange is also shown in exchange transactions taking place on a given market under conditions of competitive supply and demand, and resulting often from previous transactions. On such a market exchange ratios and prices already exist which every newcomer who desires to effect an exchange must always take into account. At first sight it might appear that the taking of these existing exchange ratios into account supplies *a measure* of the exchange value of economic objects newly brought to market. But the importance of existing prices upon the conclusion of new exchange transactions is a direct one, and does not import into the transaction a measure of exchange values. In order to fix the price for the new transaction, it is not necessary to revert from the original prices back to the "exchange value" of the commodities in question. The existing prices are merely the product of the different judgments as to values which are expressed in supply and demand, and they are not a result of a measurement of exchange value, which measurement can itself be effected only in terms of prices. In short, as price is the only conceivable measure of the exchange value of economic objects, the measuring of exchange value cannot be a condition precedent to the fixing of prices.

If we ascribe to money the function of a "measure of value," then this function cannot consist simply in the fact that money serves the purpose of determining the exchange value of commodities by fixing the exchange ratio or price. What, then, is the import of the function of money as "a measure of value"?

It is thought by many that the function of money as a measure of value or of price consists in the fact that in our economic system, which is based upon money, the prices of all objects of economic intercourse which do not represent money are expressed exclusively in terms of money, so that, as has already been mentioned, when we speak of price in general we mean price expressed in terms of money. This results simply

because money serves the purpose of a general medium of exchange, and consequently all economic objects are normally exchanged in the first place for money. Of the two equivalent values, therefore, one always consists of a sum of money. Doubtless the fact that prices of economic goods are usually expressed in money makes the comparison of prices much more easy. But to speak of a measure of prices by money would be incorrect. Prices are not *measured by* money, but, as money is used as the general medium of exchange, prices are normally *measured in* this medium, and they have their being in money.

On the other hand, price, being one side of the relation of value arising out of an act of exchange, is the *expression* of the commercial or economic value of commodities, and wherever the organisation of money has so developed that natural barter is forced into the background by buying and selling, and one side of the equation of value resulting from transactions invariably takes the form of money prices, we find in money the *general and universal expression*: the common denominator for the exchange value of all economic commodities. The unit of the monetary system of a country functions, in conjunction with that system, as a unit for the expression of values generally. Not only is the value of commodities actually bought and sold at any given moment expressed in money, whereby the measure of their exchange value in money is directly determined by the price paid for them, but in view of the prices paid in the market, the exchange value of all commodities which can possibly become objects of exchange is estimated in terms of money.

In this sense money actually serves as a uniform expression of value, and thereby fulfils in economic life a function of the greatest importance.

Just as fractions of different denominators can only be added together if they are first reduced to a common denominator, so it is only possible to express the aggregate values of a total of different kinds of goods when these goods are reduced to a common denominator of value. The values of different goods can then be estimated in terms of the same unit of value, and in this way only is it possible to obtain a method of measuring "economic means and products." To judge the amount of a person's wealth one would, in the absence of a uniform expression of value, such as money provides, have to enumerate at length all his various possessions, and in addition specify the size, nature, etc., of each separate object which he owned. It is, obviously, of the highest importance to be able to arrive at the value of a person's wealth, *e.g.* for dividing his estate among his heirs, or in determining grants of credit, imposition of taxes, etc. Furthermore, the assessment of the economic importance to a person of his

individual possessions is greatly facilitated by an estimation in terms of money. The income and expenditure of a household, its assets and liabilities, can only be co-ordinated and compared by reducing their value to money, and such a comparison gives the only requisite basis for a methodical and systematic conduct of economic affairs. This applies not only to ordinary households, but to industrial undertakings and to public bodies (States, local authorities, etc.). "The universal practice of valuing goods in terms of money is an inherent and essential factor in modern advanced economic systems. It is only this practice that renders possible the exact calculation and comparison of costs of production or of the turnover of separate undertakings, and enables the *entrepreneur* to judge of the profits produced by his capital. The possibility of estimating in money all incoming or outgoing goods and services supplies the necessary basis for all profit and loss calculations, and thereby for good management."¹

The calculation, by means of money, of the profit and loss of any undertaking is not only important for the individual *entrepreneur*, but also for the general finances of a country. In our economic organisation, in which the economic activity of an individual is not regulated by a single guiding will, but in which individual activity depends upon individual judgment—in such an organisation, which to all appearances is one of "anarchical production," the degree to which individual branches of economic activity are profitable is the regulating principle whereby production at all times adapts itself, in kind and extent, to demand. When the production of any particular type of goods lags behind demand, there is a rise in the prices of such goods, and a consequent increase in the profitableness of their production. The increased chances of making profits attract both capital and labour to this particular branch of production. Taking it the other way round, production which exceeds demand brings about a drop in prices, and thereby a reduction in profits, which in turn, prevents the attraction of capital and labour to these branches of production, and, as far as is possible without excessive loss, leads to their withdrawal therefrom. Profit and loss, which regulate the entire process of production and place the self-interest of the individual at the service of the community, can best function when it is possible to estimate the extent to which individual branches of economic activity are profitable, and such a general survey can be formed only on the basis of money.

Reciprocity between imports and exports can also be more thoroughly estimated by expressing the value of the imported and exported goods in terms of a uniform standard. Import and

¹ Eugen von Philippovich, *Allgemeine Volkswirtschaftslehre*, 8th ed., p. 235.

export values calculated in money permit of a comparison of the total imports and exports of a country, and hence a calculation of that country's trade balance. So long as money preserves a requisite stability, a comparison of the values of imports and exports of any year with those of preceding or following years can be made, and a judgment formed of the tendencies of the country's economy. These values determine, moreover, the importance of the various types of goods within the sphere of a country's international trade. Furthermore, they enable one to judge the position occupied by various foreign countries in the total import and export trade, and to compare the imports from some particular country with the exports thereto.

If we recognise the function assigned to money as a measure of value in the fact that all economic values are estimated in money, we must not overlook certain important differences between the measurement of values by money and the measurement of other quantitative relations, such as dimensions and weight.

The measurement of the dimensions or the weight of a body is effected by a special process giving the exact relation which exists between the body to be measured and the unit of measurement. In "measuring values" by money, however, the case is different. An objective relation of value between a commodity and money comes into being only at the moment in which the commodity is exchanged for money. This is so evident that an exchange transaction once completed cannot as a rule be reversed under exactly the same conditions. For the transaction was made only because each of the two parties to the contract valued the article they received more than the article they gave. By no means, however, does the fact that a commodity has been sold for a definite price in money imply that henceforth any number of units of the same commodity could be bought and sold at the same price. The price, on the basis of which the actual exchange took place, is only the result of a momentary state of the market, and this state is altered by every new offer or by every new demand of any importance. For that reason, on wholesale markets quotations are frequently given of buying and selling prices, in place of, as well as in addition to, the prices at which transactions actually have taken place. In Germany the official lists star these latter prices with *b.* (*bezahlt* = paid), sellers' prices with *B.* (*Brief* = letter), and buyers' prices with *G.* (*Geld* = money).

Thus the prices ruling in actual transactions are nothing more than an approximate basis for estimating the value of economic goods, and it is not possible to determine by means of money the value of goods, in the exact way in which the area of a piece

of land can be determined by comparing it with a given standard measure of area. The exact fixation of the value of goods by means of money, the standard measure of value, is possible only in so far as goods are actually dealt with in terms of money at any particular moment, and even then the result is only valid for the point of time at which the transactions took place. The special nature of the measurement of value by means of money is best evidenced by the fact that the same article has different values at the same point of time according as to whether it is to be bought or sold. It is still more clearly seen in such cases as those of compensation claims for damages, and particularly in regard to objects of which the supply is small and the demand limited. In such cases the difference between the prices at which the goods are bought and sold is very considerable. Menger quotes as a particularly apposite example the difference between the amount of a claim which a man may make for an artificial eye which he needs for personal use, and the claim for the same eye which could be put forward by his heir who has no use for it.

The second respect in which money as a measure of value differs essentially from all other measures is the fact that the value of money itself, in terms of which the values of other goods are expressed, is no fixed or stable magnitude as are the units of our system of weights and measures. All that is objectively fixed in the sphere of economic values is—as we must continue to reiterate—the conditions under which the various economic objects are exchanged one for another. From these conditions alone the actual exchange value of the separate commodities can be estimated, and this exchange value finds its measure at any time only in that commodity for which it is exchanged. For that reason local differences in the exchange value of a commodity, and changes in that value with time, only appear objectively in that the actual ratio in which one commodity is exchanged for another differs with time and place. Therefore, differences or changes in the ratio of value of two commodities can be established, but not differences or changes in the value of *one* commodity. If, because in an exchange transaction the ratio of value between two economic objects is demonstrated, we deduce that each of the objects exchanged contains a definite quantity of exchange value—continually affected nevertheless by economic forces which are always fluctuating—then, in the case of a displacement in the exchange ratio between two economic objects, it still remains an open question whether and how far one or the other of these objects has changed in value. If, at any given time, in a place where barter still rules, 1 ox is exchanged for 8 sheep, and at some other place, or at some other given time, 1 ox is exchanged for 6 sheep, then

it is clear that the question cannot be answered whether it is the ox as such which has diminished in value or whether it is the sheep which have increased in value. At most, by taking into consideration the various factors which influence the exchange ratio of the goods, factors such as the degree and intensity of supply and demand, and also, if necessary, by observing how the exchange ratio for one or other of the objects shapes itself in terms of other economic objects, we may draw conclusions as to the causes of the change in the exchange ratio between the two particular objects. But even such a conclusion can never claim to be infallible because of the impossibility of measuring such causes, and because the extent to which they affect the exchange ratio is indefinite.¹

Observations which apply in the case of natural exchange or barter, apply also to exchange of economic objects for money. If the money price of a commodity, or of a larger complex of commodities, is different in different places and at different times, then here also it is still an open question whether these differences are due to the commodity or to money. We shall have to consider later in greater detail the manner in which money—just like other economic objects exchangeable for money—is the subject of a demand varying in amount and intensity as well as being subject to varying conditions of supply. The variability of the supply is brought about partly by the conditions of production of the precious metals, partly by developments in monetary technique (credit payments, etc.), partly by the relationship between the various national economies (trade balances and balances of payment), and partly by intentional acts of Government (issue of paper money). The popular assumption is that money is stable in value. Under normal monetary conditions all the calculations of traders are based on this assumption. It is also a legal fiction, shown in the fact that all changes in the money price of goods are regarded and treated simply as changes in the value of these goods. This is not merely an indispensable practical expedient, but is also, and above all, occasioned by the central position which money occupies in the world of commerce. All other goods being regularly exchanged for the commodity "money," and their value being always expressed in terms of the commodity "money," while money itself is exchanged for all kinds of commodities and expresses their value, it is not surprising that money should appear as the fixed pole amid the moving currents of economic values. Movements in the values of commodities in relation to money, looked at from the monetary angle, whilst it itself also changing in value, are, in effect, analogous to the movements of

¹ The problems under consideration here are dealt with more fully in Sec. 4, Chap. XII of this book.

stars as they appear from the earth which is itself in motion. Not until severe disturbances have occurred, such as those which took place in Germany of recent years, especially since the summer of 1921, is it possible to shake the popular belief in the fiction that the value of money is stable and to create practical conditions which drive men to look for a measure of value independent of and more reliable than money.

This second important difference between the measurement of value by means of money and all other forms of measurement may be shortly expressed by the statement that, in the case of all other measures, both the magnitude to be measured as well as the standard by which it is measured are objectively fixed (for instance, the surface of a piece of land and the square yard, a bale of cotton and the unit of weight), and the task of measurement consists in ascertaining the relation between the measuring and the measured magnitudes, whereas in the matter of exchange value the fixed factor is the ratio between two values from which the absolute amount of each cannot be directly deduced, so that even local deviations or fluctuations with time in the ratio do not permit of our judging as to whether and how far the deviations are due to one or the other side of the ratio.

The possibility of local and temporal differences in the value of money is a factor which renders more difficult any *comparison* between values expressed in terms of money from place to place and for different points of time. Even before the collapse of the German monetary system, popular comparison led to a recognition of the fact that the value of money varied from place to place and from one time to another. Expressed in another way, it was noted that the "cost of living" at some particular place, or at some particular time, was cheaper or dearer, as the case might be.

The great importance of the function of money as a measure of value led to its being frequently placed on a par with the function as a medium of exchange. By some, especially by lawyers, the function of acting as a measure of value has been regarded as the really essential one to the conception of money. A closer examination, however, shows that the function of acting as a measure of value is derived from the function of acting as a general medium of exchange. When dealing with the nature of the function of acting as a measure of value, it was pointed out that money became the general measure of value because, in supplanting natural economic arrangements by those based on money, all other economic goods came more and more to be exchanged for money, and ultimately found in money their normal equivalent and their normal denominator of value. In this way the general medium of exchange developed into the general measure of value in the sense in which any measure of value can be defined at all.

A reciprocal connection similar to that between the functions of money as a medium of exchange and as a medium of payment, does not exist between the functions of money as a measure of value and as a medium of exchange. It is not apparent how any economic commodity could, merely by reason of serving as a measure of value, be clothed with the function of acting as a medium of exchange or payment. Nevertheless it has been asserted that such a connection exists. Knies writes: "Legislative provisions concerning the measure of value follow from the fact that the State fixes upon gold, or silver, or silver and gold, as the object of value in terms of whose exchange value the values of all other objects must be legally estimated whenever it becomes necessary for the courts of law to give a decision on such a point. These substances must, therefore, supply the raw material for coins, used as fractional divisions for measuring value. By fixing legally the *standard* measure of price, we determine what quantity of the goods to be used as a measure of value is to be taken as a unit for calculating prices; in what multiples and fractions of this unit estimates of value can legally be made; what are the units of value in which liabilities can be legally binding and in which liabilities can be settled. For this very reason, these quotas and units must be represented by coins backed by the guarantee of the State (*fides publica*). In other words, coins are the means of payment because they are the quantitative fractional divisions of the measure of value. Money is thus a medium of payment because it is the measure of value of forms of wealth constituting the subject-matter of legal judgments, and because the unit of coinage is the measure of money debts."

Logically, however, this puts the cart before the horse. It is not because money *is a measure of value* that legal liabilities and judgments as to debts, fines, and damages must be expressed in terms of money; but rather the amounts of wealth to be claimed must be estimated and determined in money, *because the latter is the general and legally recognised medium of payment*, and because, consequently, damages and fines must be *paid* in money, debts *liquidated* in money—and, of course, in all these cases we are only dealing with definite sums of money.

The assertion that the function of money as a measure of value is absolutely and unconditionally derived from that of exchange and payment, has been combated by some on the historical ground that there is some evidence (it is thought) that the medium of exchange and the measure of value have been at times represented by different kinds of commodities. In particular, reference is generally made to Homer, whose Greeks are supposed to have estimated value in terms of oxen, but paid in the precious metals. The mere fact, however, that the old method of expressing values

persisted when the original medium of exchange had been supplanted by a new medium does not by any means disprove the derivation, in theory and principle, of the function of measure of value from the function of medium of exchange and payment. This was the case with the Greeks of Homer, whose times were clearly marked by a transition from the use of oxen as money to the use of the precious metals. Even in our times, characterised by rapid changes, such observations can be made. The English even now frequently calculate on the basis of their old gold coin, the guinea, which was withdrawn from circulation as far back as 1816, whilst they pay in pounds sterling. In South Germany, for many years after the introduction of Imperial currency, the cattle-markets here and there calculated on the basis of the "Karoline" gold coin, which had long before disappeared. In North Germany accounting in talers is still common, but in this case the taler remained in circulation for a long time, having been incorporated in the Imperial system as legal tender money. The preservation of the old method of expressing values after the new medium of exchange and payment had been introduced and organically embodied in the system proves, if correctly considered, the reverse of the assertion that the function of acting as the measure of value is of essential importance to the conception of money, or is equal in importance to the function of acting as the medium of exchange and payment. If the Greeks of Homer carried out their exchange transactions and paid in the precious metals, but put values on their goods in terms of oxen, no one would on that account consider oxen to have been the money of the Homeric epoch: any more than guineas, now no longer in circulation, can be regarded as English money merely because certain prices are by custom still expressed in this coin.

¶ 6. The Function of Money as a Carrier of Value through Time and Space

(Medium of Preservation of, and Carrier of Value)

The essential nature of money has been shown to consist in its being the medium of economic intercourse between economic individuals. It brings about and facilitates such intercourse by itself entering into it, and in the case of acts of exchange, payments, and transfers of capital it passes from hand to hand. In all these cases money functions as a carrier of value from person to person. It can, however, at the same time function as a carrier of value through time and space, as when it is deposited with a definite person with a view to repayment at some later point of time, or when it is transferred from one person to another who lives at a different place. But what is essential to the function

of money as a medium of economic intercourse is the *interpersonal* transfer of value. The further functions as a carrier of value through time and space can exist as special functions side by side with this cardinal function of money, but only if they represent not merely subsidiary processes of exchange and of payment, but services which money performs independently of its being a medium of exchange and payment. This only occurs in cases in which it can be demonstrated that money is the carrier of value through time and space, without being at the same time a carrier of value from person to person.

In point of fact money frequently performs services as a carrier of value through time and space without at the same time changing its owner.

It is the first sign of systematic economy when the actions of men are no longer directed purely to the immediate satisfaction of wants, but show a certain care for the future, a care which in its initial stages manifests itself in man by his refraining from carelessly or wilfully destroying that which he cannot himself consume, and finally develops to the stage in which, for the purpose of securing his economic future, he restricts consumption of his own free will, even though this may entail a perceptible sacrifice in the present.

But the prolonged preservation of commodities set aside for consumption is rendered difficult in that most consumable commodities, and particularly those which are most necessary, such as bread, meat, fish, fruit, etc., are comparatively perishable. In addition, the storage of any considerable quantities of such commodities generally involves preparation and space of a kind which, as a rule, are not at the disposal of individuals. For storage over a longer period, therefore, only such goods are suitable as show a large measure of resistance to the destructive forces of nature, and especially those which have large value in a small bulk. This last consideration is also of assistance in safeguarding such goods, whether by concealment or by special precautions, against robbery and theft.

Natural causes would constitute such things as ornaments, precious vessels, weapons, metals, precious stones, etc., the first objects of permanent ownership, earlier even than herds of cattle, which latter presuppose the existence of a systematic economic organisation.

These things accumulated in the continued ownership of individuals, not necessarily by reason of any care on his part for the economic future, but usually simply because by their nature such things do not serve the purpose of a single act of consumption, but are intended for continuous use, often lasting through many generations.

The stage of production for personal use must, in fact, have already passed into that of an economic organisation based on barter by the time we find such commodities serving both for purposes of ornament and as a provision for the future, as *e.g.* in the case of the Indian women, who carry their possessions on their bodies in the form of silver ornaments to be given up in bad times in exchange for bread and other necessities. Here we have the properties of direct consumability, a store of value, and a means of exchange combined in one article. Another example is the case of the large treasure-troves mentioned in fable and story, and the treasures to this day in the possession of Indian princes. In normal times these serve to satisfy the desire for ostentation and luxury of the great and as the brilliant emblems of their wealth and power. At the same time they represent vast wealth, which in case of need can be exchanged for necessities or be used for payments to troops.

The pure form of storage of values for future use is found in the case where the stored objects are, during the period of storage, withdrawn from all use, the motive for such accumulation and storage being a desire to provide a security for the future. After that stage in the evolution of money, when coins had come into existence in a form in which they were just money and not at the same time also articles of ornament, money became the most important object of such storage. The only economic use of money as such is to spend it. Storage of money is simply a complete giving up of its use for the time of the storage. Coins hoarded by peasants in stockings or buried in caskets in the ground are clear examples of such storage. But a war treasure such as that created by Germany in 1871, in the shape of the 120 million marks in gold coin in the Julius Tower at Spandau, constituted, in the actual purpose for which it was intended, an interesting counterpart to the diamonds, jewels, costly vessels, and articles of ornament composing the treasures of Indian princes. To this category also belong, subject to certain restrictions to be discussed later, reserves of cash kept by individual economic units against more or less specific future needs, and particularly the vast cash reserves of a modern central bank, upon which not only the bank itself but indirectly the country at large can draw in case of need.

As these observations show that values which are intended for use in one form or another at some future time are to a large extent actually preserved in the form of money, we must now consider the connection between the function of money as a "carrier of value through time," and the nature of money as such.

The intimate relation which exists between the function of money as a carrier of value from person to person and as a carrier

of value through time demonstrates the almost obvious truth that if there are important properties which render the precious metals especially adapted for use as money, these same properties facilitate their employment as a store of value. These properties are durability, relative stability of value, high value in small bulk, and universal acceptability.

In these respects the functions of money as a medium of interpersonal economic intercourse and as a carrier of value through time have to some extent the same origin. But from another point of view the function of money as a store of value is derived from the cardinal function of money. When wealth is stored for future use, whether for direct consumption or for productive purposes, the future demand can rarely be absolutely estimated in advance. In those cases in which it can be so estimated, the storage of the goods is subject to the difficulties previously mentioned. The storage of money, however, gives the greatest freedom of action for unforeseen events, and as regards the future use of wealth for consumption or production. Normally, money can procure all commodities which are procurable; it can at any time be used for payments, whether unforeseen or not; it is the most convenient and most welcome form in which to lend capital; it is the medium of interpersonal economic intercourse. It is, therefore, the most suitable commodity for the storage of value and for the accumulation of wealth for future use. All other objects of value such as precious stones, pearls, landed property, etc., must in an emergency be first exchanged for money, and possibly at a time when such exchange cannot be effected without loss. Money alone is an ever-ready medium available for any purpose.

The advantages which money possesses in subserving the function of a carrier of value through time may, however, disappear if confidence no longer exists in the stability of value of the form of money used as a medium of payment or exchange. In such a case—of which the present times give examples—the demand for a store of values turns to other objects: to foreign currencies and securities, as well as to all kinds of real property.

Notwithstanding all the advantages which, in a well-ordered monetary system, money possesses as a carrier of value through time, it has even in normal times been by no means the exclusive medium for the storage of values in the same sense as it is, for example, the general medium of exchange and of payment. At all times, in addition to money, ornaments, precious stones, pearls, silver and gold plate, and other valuables have, irrespective of their ordinary uses, been to some extent regarded as an easily realisable reserve. In all ages, too, landed property, which by reason of its immobility is diametrically opposed to the most

movable of all commodities, money, has to a marked extent been used for the purpose of the absolutely safe investment of wealth.

Above all, it must be pointed out that the trend of all recent developments in economic life, which are directed to the utilisation of all economic forces for the creation of new values, and to their exploitation as far as possible to this end, is to limit to the utmost the use of money for hoarding values. Money locked up in a box lies idle. Whilst it is so locked up it brings no profit to its owner or to the community as a whole. As soon, however, as legal security becomes so firmly established that money claims falling due at a future point of time are negotiable almost as easily as is money itself, every individual is placed in the position of disposing of any money for which he has no present need, but which he desires to safeguard for the future by lending it to trustworthy persons and concerns at interest, or by investing it in interest-bearing securities. The small man, instead of keeping his savings in his own home, takes them to the savings bank. Business men entrust their cash reserves to the banks, and wealthy men, instead of keeping their possessions in the form of cash, invest them in interest-bearing securities. So long as confidence in the savings banks, in the central banks, and in the State, or in any other debtor remains unshaken, the preservation of values is just as well fulfilled in this way as by the locking up of money, and the accumulated values, moreover, are at the same time productive. They produce interest for their owner and are at the disposal of the community for economic purposes.

These immense advantages had caused such a diminution in cash accumulations beyond those normally required for purchases and payments that, before the War, the peasant's stocking and the gold-filled casket appeared as curiosities. On the other hand, in the large central banks, as already stated, enormous reserves of metallic money had piled up, far in excess of the daily requirements of these institutions and unparalleled in preceding epochs. This phenomenon in no way contradicts the importance of the function of money as a store of values. The large reserves were simply the result of intensive concentration of individual accumulations. Enormous as they appeared, they were relatively small as compared with the sum total of individual cash reserves, the separate preservation of which they rendered superfluous.

The fact that the storage of money was more and more being replaced by interest-bearing investment means nothing more than that the function of money as a medium for the preservation of values has been continuously supplanted by its function as a medium of capital transactions. More correctly, the former function has become more and more fused with the latter, for

money, as such, although not the accumulated coins, remained a store of value, even when lent at interest, and all the reasons which in earlier days had favoured actual hoarding of money in preference to the accumulation of other forms of wealth have resulted in a tendency to transform wealth for which its owners did not find immediate and direct employment into claims to money and not into claims to other economic goods.

Concerning the functions of money as a carrier of value through space there is little to be said. As an independent function, that of a medium of transporting value need only be considered in so far as money remains thereby in the possession of the same person—that is, principally, in cases in which money accompanies the owner when he changes his locality. Money does not perform an independent service as a carrier of value through space when, for example, a balance of international payments is settled by its transfer, because in such a case the money discharges the excess of imports and of freights, interest, etc., due to other countries over exports and freights, etc., due from those countries. Money functions in such a case as a medium of exchange and as a medium of payment, and when at the same time larger international movements of capital take place, say by the investment of native capital in foreign loans or undertakings, and *vice versa*, money furthermore functions as a medium of transfer of capital, that is, simply as a carrier of value from person to person. It is true that it then also functions as a carrier of value through space, but only in so far as the persons between whom it acts as a medium of economic intercourse are situated in different places. On the other hand, the independent function of money as a medium of transporting values comes into play in those cases in which money accompanies its owner on travel, change of habitation, and migration, or where the owner transfers his wealth or some portion of it in the form of money from one place to another for purposes of storage or productive employment. The emigrant, for example, finds it necessary to translate into money his immobile property, and a part of his mobile property in order to be able to take his possessions with him.

The very fact that an act of exchange or of payment normally implies a transport of value, occasionally over large distances, must of itself have resulted in easily transportable commodities—that is, commodities especially adapted for the purpose, such as the precious metals—serving as a general medium of exchange and payment. Apart from facility of transport itself, the ease with which the carrier of value through space can be used in the place to which it is transferred is of importance, and this requirement is fulfilled in the highest possible degree by the general and universal medium of exchange and payment.

The function of money as a medium of storage of value, and also its function as a medium of transport of value, are in part due to the same conditions as determine the cardinal function of money as a medium of interpersonal economic intercourse, and in part appear as a derivative of the cardinal function of money itself.

¶ 7. Summary

The study of the individual functions of money confirm on the whole the correctness and completeness of the definition of the concept of money obtained from the study of its position in economic life. The functions of money as a medium of exchange, as a medium of payment, and as a medium of capital transfer stand to its function as a medium of economic intercourse between economic individuals in the relation in which parts stand to the whole: they are subfunctions of the basic function of money. The splitting up of the basic function into these subfunctions corresponds exactly to the analysis of the economic processes in which money has to intervene as a medium. The function of money as a measure of value follows necessarily from its function as an instrument of interpersonal economic intercourse, and especially from its function as a medium of exchange. On the one hand, the functions of money as a medium of storage of value and as a medium of transport of value are conditioned by requirements similar to those determining the basic function of money, and, on the other hand, money, by virtue of its properties of acting as a medium of exchange, of payment, and of capital transfer, is, in well-ordered monetary systems, especially adapted for purposes of storage and of the transport of values. As, however, the connection with the basic function of money is by no means so close and absolute as it is in the case of the function of money as a measure of value, and as, moreover, money shares the functions referred to with other economic objects, it follows that we are dealing here with subsidiary functions of money.

The various functions, however, be they subfunctions, derivative or subsidiary functions, can all be traced back to the basic function of money as an instrument of economic intercourse.

Taking it all in all, the institution of money is a *sine qua non* of our economic system based on the division of labour, private ownership, and the free self-determination of individuals. The almost unlimited economic intercourse made feasible by money has freed the economic activity of the individual from the restricted sphere of his own personal needs or the needs of a narrowly limited circle of direct purchasers of his products. It has thereby made possible a division of labour unthought of in its primitive

beginnings. Money supplies the economic instrument which, while preserving personal freedom and retaining the principle of private property, permits the organisation of production in separate undertakings, the co-ordination of the forces of labour and capital for the purposes of production, and enables the reward of capital and of labour to be paid from the profits of such undertakings.

Money alone has produced the conditions necessary for that enormous accumulation of mobile wealth which is as vital to rational and effective production as are labour and the division of labour. Money makes it possible to survey how far each individual branch of production is profitable, and thereby enables production to be regulated by the free interplay of economic forces.

Money cannot, therefore, be excluded from our economic organisation without that very organisation itself being upset.

The various difficulties which are at times ascribed to the existence of money, in particular the difficulty of finding at all times purchasers for products and services at profitable prices, are not really due to the intervention of money, but are rooted in the structure of our economic system, within which the demand of the community regulates the economic activities of individuals by the ease or the difficulty with which the disposal of goods and services can be effected.

Disturbances of the monetary system or the collapse thereof are unquestionably capable of leading to serious disorganisation of trade and of the economic life of the community. Our own times show this very clearly. But the assertion that money, by reason of its very presence, renders more difficult the disposal of commodities conflicts absolutely with the facts of the actual working of money. Attempts have been made to substantiate this assertion by pointing out that, in a society organised on a money basis, each individual is forced to sell his products or labour for money because he himself can only purchase for money, and that, therefore, the possibility of disposing of his goods or services is restricted to the narrow circle of persons who can give him money in exchange, while the possibility of his disposing of them to those who can give him goods in exchange, but have no money, is alleged to be non-existent.

This line of argument disregards the fact that, in an economic system based on money, in all cases in which a direct exchange satisfies the economic purpose of both sides, there is nothing to prevent such an act of exchange taking place. Such direct exchanges are to be met with in small-scale transactions even to this day, although they occur disguised as money transactions. If, for instance, a butcher and a baker supply each other with

bread and meat respectively, then each will, as a rule, charge the other in terms of money. But the importance of money of course lay, from the very beginning, in the fact that such acts of direct exchange are only possible in very rare cases. No producer improves his position if he disposes of such of his products as it is necessary for him to get rid of to another person who cannot give him either money or such goods as he requires for his own use, but can only give him things for which he has no use and must first exchange for other things.

It has been thought that this difficulty of direct exchange could be overcome by circumventing the use of money by concentrating exchange transactions in one institution, a kind of "exchange clearing-house," "exchange bank," or "goods bank," to which a producer could at any time and at all times bring his wares and deliver them up, being thereby entitled to receive that which he needed of different goods similarly delivered by others. Attempts to establish such exchange banks have all sooner or later turned out failures, and it could not have been otherwise, as the very idea is unsound and impracticable. If an exchange bank accepts to an unlimited extent goods of one kind or another, it cannot issue to the suppliers unlimited delivery orders for goods which the latter need without having at the same time the power of regulating total production in accordance with demand. Such an institution would find itself receiving large quantities of things for which there is no demand, and having to issue against these delivery orders for things of which it has insufficient supplies or no supplies at all.

Worked out to its logical conclusion, such an exchange bank, the purpose of which is to create a substitute for money, ought to issue its delivery orders not only in exchange for goods, but also in exchange for services which nowadays are paid for in money. The bank would have to accept orders for services as well as for goods. Such a task, as well as the task of establishing an absolute and stable equilibrium between supply and demand, is a matter of absolute impossibility in our social system.

From this it is evident that the abolition of money, by substituting exchange banks, would remove from our economic machine a wheel, without which the machine could not function. Only money which freely passes from person to person as a token of value taken and given in exchange for all other objects of value and for services, and this on a basis determined at any moment by the general relation of supply and demand, renders it possible to enlist in the service of the community the labour and capital of individuals whilst preserving their economic independence, and

at the same time to make it possible for the individual to be supplied with the goods and the services needed by him out of the stock of the community. In brief, only money makes it possible to establish that economic compromise between personal freedom and social organisation which obtains in our economic system.

